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WASHINGTON MEDICAL ANNALS

THE TREATMENT OF POSTOPERATIVE ADHESIONS.*

By A. L. STAVELY, A. M., M. D.,

Washington, D. C.

The prevention of postoperative adhesions or the cure of those already existing as the result of some pathological condition or operation is a subject of much interest to the abdominal surgeon and its importance seems sufficient to justify a consideration of the various suggestions offered for their prevention or relief. Where no adhesions have existed before an operation their prevention depends upon the adoption of a careful technique which consists in a gentle handling of the intestines and other contents of the abdominal cavity, the avoidance of exposure, the painstaking obliteration of raw surfaces due to surgical manipulation, the thorough stoppage of all hemorrhage and the avoidance of drains whenever possible.

It is presupposed that all operations should be conducted with as perfect an asepsis and in as short time as possible. In addition to the proper regard of these surgical axioms, Ward advises keeping up the heat of the abdominal viscera by the use of frequent applications of hot salt solution and floating out of the intestines in it just before closure, so that they may assume their normal relations. He recommends after operation the early use of high enemata and cathartics, and if these fail, the trial of oxygen gas in the Trendelenberg position. Clark advises, just before the closure of the abdominal wound, the giving of a large salt-solution enema for the purpose of distending and straightening out the sigmoid and colon, and giving them a chance to occupy their

* Read before the Medical Society, January 19, 1910.

proper anatomical position, and he thinks there is no better way than by this hydraulic distension. Another recommendation of importance is the use of absorbable sutures.

Here, in a few words, I have given a description of the possible measures which are applicable for the prevention of adhesions in a case where none have pre-existed. To enlarge a little: Disregard of the delicate structure of the peritoneum will frequently result seriously. Even the removal of pus or other contaminating fluids is a mistake, unless it is done carefully. Good drainage is of more importance. It is no longer considered advisable to remove peritoneal plastic exudates, for by so doing one opens up the lymphatics, the stomata of which have been sealed against absorption, and invites the formation of adhesions to surfaces, which Nature has been protecting.

The exposure of the intestines may be prevented by surrounding them or packing them away from the field with large gauze pads moistened with salt solution. Raw surfaces such as pedicle stumps ordinarily may be inverted and covered by peritoneum. Where the surfaces are so large as not to permit this, plans must be devised to prevent the formation of harmful adhesions, some of which will be mentioned later. Neglect to perfectly control hemorrhage may result in the formation of a blood clot, around which the intestines will agglutinate. Sometimes these agglutinations will become permanent adhesions. Such adhesions, however, are seldom permanent, and disappear with the absorption of the clot.

The pressure of a drain of any character may develop chronic adhesions. We use too much drainage—I mean we often use it unnecessarily. Adhesions resulting from pathological conditions are most commonly found in the region of the cecum, gallbladder, pylorus, sigmoid and the pelvis. As the result of surgical traumatism they may occur anywhere. Their development after operation depends in a great measure on the individual. Why it is so is not understood; but some persons will acquire adhesions after the slightest manipulation, while others will tolerate extensive injuries with no permanently bad results. The remedies suggested for their prevention are numerous and generally inadequate; but their variety indicates a laudable and earnest desire to relieve what is, next to infection, the most trying complication in abdominal surgery. I will refer first to the

various extraneous agents, which may be classified as 1, gases; 2, liquid media, and 3, films or membranes.

Sterilized air has been injected under pressure with the object of distending the cavity and keeping the intestines separated. While this method would keep the bowels apart in some places, it would probably force them in closer apposition in others and militate against the good results hoped for. Oxygen gas has been introduced in the same way, through a small rubber tube after the introduction of the last suture, which is tied immediately after the removal of the tube. This gas is supposed to have a specific effect on adhesions; but from the reports of experiments, one is impressed with the fact that the results are far from conclusive or convincing. Bainbridge (*Annals of Surgery*, March, 1909), while admitting that final conclusions are impossible at this time, concludes that its use intra-abdominally diminishes shock, nausea, vomiting and hemorrhage, assists in preventing the formation of adhesions and, after they are broken up, lessens the likelihood of their return. Nitrogen has been tried and found of no value.

For several years a favorite part of the technique of some operators has been to fill the abdominal cavity with salt solution, and while this is of value in diluting morbid products and through rapid absorption in relieving thirst, it is far from certain that it has any positive effect in preventing adhesions. Sterile olive oil has been used in large quantities. Blake believes the adhesions are less extensive where oil is used. Most of the experimenters, however, find no efficacy in it, while others saw evidences of harm from a positive irritation and very slow absorption. Several weeks are sometimes required to effect its complete disappearance.

Vogel strongly endorses the use of gum arabic, one part, to two of salt solution. This, he claims, produces a slippery coating which is eminently satisfactory. He says that in rabbits, where he has used the preparation and has given physostigmin hypodermically, no adhesions have formed. Stern professes to have had good results with tallow and fat. Paraffin and solutions of agar and gelatine are of no use. Gellhorn has used lanolin in a number of experiments on dogs and rabbits, and his conclusions are rather favorable. He thinks it does not act as a chemical poison, as some aver, and feels that, while in some of the experiments the results were discouraging, in others they were remarkably satis-

factory. I will summarize one of his experiments, as described by him. He took a 24-pound dog, made a central incision, cut strips from the gastric peritoneum, scraped the anterior wall of the stomach and the parietal peritoneum with a knife, poured over the damaged surfaces a warm solution of lanolin, and then stitched the areas together so as to insure coaptation. Ten days later the abdomen was opened and there were no adhesions anywhere. He claims for it these advantages: 1, it adheres to moist surfaces; 2, does not irritate; 3, can be sterilized; and 4, is slowly absorbable.

Morris, of New York, has experimented extensively with membranes, and his advocacy of the Cargile membrane has resulted in its widespread use. The substance mentioned is the sterilized peritoneum of the ox, and was suggested and introduced by Dr. Cargile. Morris' claims have been disputed by others, who have tried it in animals. I have used it many times with the hope that it might prove beneficial, but conclusions from its use in the human subject are very uncertain, as we never can tell when adhesions are going to cause disagreeable symptoms, and their absence does not necessarily mean that adhesions have not formed.

In a case I have to report, in the second operation, performed two weeks after the first, the membrane was found intact; part of it was organized, and over an area of several square inches where it had been used the bowels had not adhered.

Morris recommends as a mechanical protective the use of aristol, which he claims produces a film. He also speaks well of triiodide of methyl, which produces a smooth coagulum and undergoes slow absorption. The last, he says, is useless in the presence of oozing. Stern advocates the use of collodion on uterine stumps. He says it does not irritate, and as a result of its use he had no adhesions. He admits it will not prevent the formation of adhesions between intestines, or the intestines and the abdominal wall. Physostigmin and eserine salicylate have been administered hypodermically for the purpose of developing an active peristalsis, with the hope that through the motion caused by it adhesions will not have time to form. Atropine has been used for the same purpose. Of thiosinamin Gellhorn says: This drug and its combination with salicylate of soda, the so-called fibrolysin, are supposed to have a softening effect on cicatrices and other abnormal formation of connective tissue. For this

reason both preparations have been tried by hypodermic injection in cases of preëxisting adhesions of the peritoneum. The results are conflicting.

Charring of the tissues by the use of the thermo-cautery is of no advantage. A deep charring will prevent adhesions, but it is seldom possible to burn deeply, except on stumps, and light applications only encourage their formation.

Hetzler, of Kansas City, has investigated the subject from another standpoint. He tries to prevent the formation of fibrin by using drugs which diminish the coagulability of the blood, and for this purpose he used phosphorus by the mouth to destroy the fibrinogen, and peptones by hypodermic injection to neutralize the fibrin ferment. Strassmann, of Berlin, in pelvic operations involving the separation of many and dense adhesions, uses a gauze vaginal drain saturated with liq. alumini acetici to prevent fibrinous exudates, with what results I do not know.

Gellhorn (*Surg. Gyn. and Obst.*, May, 1909), influenced by Bier's teachings, has strongly indorsed the use of dry heat in gynecology. Bier used a simple box and a small sheet-iron chimney: Gellhorn substituted a semicircular cradle made of thin sheet iron lined with asbestos and containing eight electric-light bulbs. He uses 16 to 32-candlepower lights, according to the amount of heat desired. By using a perfectly dry heat the temperature of the chamber can be raised as high as 300, though 200 to 220 is hot enough for most purposes. The air is kept dry by using bags of calcium chloride suspended under the hood. The effect of this extreme heat is to induce an active hyperemia, which extends to and affects the abdominal organs. The first effect is a relief of pain and a soothing relaxation and sleepiness. Without going into any particular detail of its therapeutic uses it is sufficient to mention its advantages in the absorption of para- and perimetric exudates. During fever the hot-air treatment of a pelvic exudate is contra-indicated on account of the tendency to promote the formation of pus. In the chronic stage of a pelvic exudate, where the tissues are hard and the organs are displaced and fixed, the results of the treatment are unusually satisfactory. There is noticed a relief of pain and complete cessation of discomfort after four or five treatments. The number of treatments varies from eight to thirty-five.

In chronic cases, where pus exists, it is advised to evacuate the

pus before starting the dry-heat treatment. He admits that often these cicatricial masses require a great deal of time, and sometimes do not disappear. He says the unusually good effects upon the parametric exudates suggested the use in chronic adhesive peritonitis within the pelvis; but he believes on the whole these cases yield better to surgical treatment. In regard to post-operative adhesions he says: The hot-air treatment is also useful in recent postoperative adhesions; when following an otherwise clean laparotomy slight elevation of temperature occurs after the regular evacuation of the bowels, and in the absence of disturbed wound healing or any other tangible cause we must assume that adhesions are forming. In such cases I do not hesitate to apply the hot-air treatment after the sixth day "post operationem," and have observed repeatedly that the temperature subsided and that on later examinations no evidence of adhesions could be found.

A personal communication from Dr. Gellhorn will be of interest in this connection. He says: I greatly appreciate your interest in my article on peritoneal adhesions. Unfortunately I have not been able to solve this difficult problem. I have asked ever so many eminent operators, both in this country and abroad, what they did to prevent preëxisting adhesions, but I have never received a satisfactory answer. Greiffenberg, of St. Petersburg, published a case which he had subjected to ten laparotomies for the relief of peritoneal adhesions, and he claimed that finally the patient was subjectively relieved. He must have been an enthusiast. I would have lost courage after the second operation. In due time I shall continue my experiments with lanolin. At the present they are not applicable for operations on the human. Until something better is known I shall use extensively Bier's hyperemic treatment. If there are ever so slight elevations of temperature after the first free evacuation of the bowels, and in the absence of any tangible cause, I commence with the heat even as early as five days after the operation. I have not yet seen any untoward effect from this regime; and, on the other hand it seems to have a restraining influence upon the extent of any adhesions. For drainage after vaginal operations I regularly use Strassmann's method.

Newly formed adhesions are easily separated by blunt dissection or by the use of gauze, and usually give little concern. The

older and firmer adhesions often require great skill and patience. Bands are a source of distress and danger, by limiting mobility or producing obstruction, and must be removed. When the intestines are adherent by broad surfaces to other loops or to the abdominal parietes, unless disagreeable symptoms are produced by their presence, they are better left untouched, as a harmless condition may be converted into one attended with disastrous consequences. When it is necessary to separate extensive adhesions it is a serious problem to know how to do it to the best advantage. Fortunately the peritoneum is loosely attached, and it is often possible to strip it loose and transfer it so as to cover over the offending raw surfaces. This may sometimes be done by sliding the membrane over *en masse*, or flaps may be extended from a place where they can be easily spared. It might even be possible to excise a portion for transplantation, with a reasonable hope of its becoming adherent to the new area. The vitality of the peritoneum is not especially impaired by free dissection. Having exhausted our resources with the peritoneum as an adjustable membrane we have yet another means of utilizing it in certain cases ; that is, by interposing movable organs which are covered by peritoneum. The most universally available organ, if we may call it such, is, on account of its wide range of mobility, the omentum.

Wherever there is a localized inflammatory condition in the abdominal cavity the omentum will usually be found in the rôle of protector, destroying bacteria, shutting off the infected focus and preventing intestinal adhesions. Appreciating the value of the omentum surgeons often utilize it for purposes for which it is by nature adapted. Senn has transplanted omental grafts to raw areas with success, but it has not been found satisfactory when stitched to the small intestine. The Mayos, after operations on the gallbladder, where adhesions are present or anticipated, stitch the omentum and transverse colon in such a way that if new adhesions form they will not interfere with organs which depend upon their mobility for their proper functioning. In pelvic conditions where the floor is left denuded of peritoneum a plan frequently recommended is to retrovert the uterus so as to fill in the pelvic space. The sigmoid flexure and the cecum, on account of their mobility, are sometimes of great service.

Webster, of Chicago, recommends the following procedure after

hysterectomies, where extensive denudations must be covered. He leaves a generous portion of the anterior peritoneal layer of the uterus continuous with the broad ligaments. This layer is brought back and stitched to the posterior part of the pelvis and rectum. This shuts off the pelvic cavity entirely, and the space below is drained through the vagina. Where raw surfaces cannot be covered in this way he stitches the mesentery to the parietal peritoneum. Sometimes, when the cecum was found sufficiently movable, it was used to fill the gap after the removal of the appendix.

When one encounters mass adhesions good may often be done by careful dissection of certain coils and arranging them so that when adhesions form again they will do so in a manner which will be conducive to the relief of the symptoms. Sometimes, where the intestines are so firmly united that separation is impossible, the judicious anastomosis of certain opposing loops may improve the condition. When the condition is acute, the patient in a wretched state and the symptoms those of obstruction not too high up, a colostomy or enterostomy may afford temporary relief. As a last resort in cases of extensive adhesions the complete removal of the involved bowel may be the only possible expedient. This may consist in the removal of a large segment or two or more smaller ones. Two or even three yards of small intestine have been removed with success.

About a year ago a young woman was referred to me for the relief of severe and persistent abdominal pains, resulting from intestinal adhesions, and a history of the case prior and subsequent to my meeting her may be of interest, as illustrating the difficulty of relieving obstinate intestinal adhesion.

Miss N. had an attack of appendicitis in 1895. To quote her more or less exactly, she had acute stomach trouble, difficult bowel movements, mucous discharges and pain. She was extremely nervous, had frequent chills and fever, constant backache and a good deal of soreness around McBurney's point. In April, 1895, she had a bad attack, with severe pain in the region of the kidney and extending down the right side to the pelvis, and even into the right leg. Symptoms were the same as before, with the addition of nausea, headaches and an opening and closing sensation in the right side. Finally, in 1907 an exploratory operation was performed by Markoe, and the appendix was found very

much elongated, inflamed and adherent to the kidney and tightly bound down by adhesions. The chills and fever and the peculiar feeling in the right side ceased after the operation, but otherwise she was not improved, and grew steadily worse until November, 1907, when an operation was performed for adhesions. Not being benefited, she had another in March, 1908. This was a severe operation, and resulted in intestinal obstruction nineteen days later.

Dr. J. V. D. Young, of New York City, who operated, gives this report (April 9, 1909) to Dr. Sterling Ruffin:

"I operated on Miss N. for adhesions following a laparotomy performed by Dr. Markoe. The relief was complete for awhile; later, she developed some pain and I operated again, using the suggestion of Dr. Cronk for the prevention of adhesions by the use of sterile olive oil. The adhesions at the first operation were severe; the adhesions at the second operation were far worse, and I spent about two hours tieing off bands and breaking off adhesions, in the hope that the oil might be more effective in its mechanical separation of the peritoneal layers. For about a month after this operation she was relieved from all pain; her recovery was most satisfactory; she gained flesh rapidly and was in all particulars better than I have ever seen her. Suddenly, one day last summer she developed an acute intestinal obstruction, for which I operated, breaking up the adhesions in one particular knuckle of gut, which was the site of the obstruction. From the obstruction an active peritonitis had developed, which had caused the usual amount of peritoneal damage. There was a little oil left in the abdomen. The condition was so extreme that I closed the wound partially and put in Miculicz drain. To my absolute surprise the lady recovered, I do not ever recall a patient in a worse condition getting well enough to leave the hospital.

"As to the outlook of a fifth operation I am compelled to confess a degree of uncertainty; however, it might be well worth while to try it, especially if supplemented by the use of either oxygen intra-abdominally or the possible using of the sterile olive oil again.

"I should be greatly interested in hearing about the operation and its results. Miss N. is a very good patient, never giving unnecessary trouble and standing her necessary pain very well."

In April, 1909, she was referred to me by Dr. Ruffin, and her condition seemed so absolutely miserable that I advised a fifth operation. She said she preferred to die rather than endure the

suffering of the last few months. On April 8th a central incision was made, removing the dense scars of previous operations. The small intestines were intimately adherent to the parietal surfaces of the abdominal wound for its entire length, and their separation was extremely difficult. The adhesions elsewhere were very extensive and veil-like, and involved both the intestines and the abdominal wall. The latter were not so dense, and their separation was not a matter of great difficulty. After a tedious but thorough dissection I covered many of the raw surfaces with Cargile membrane and closed. She did fairly well for a few days, but it was soon evident that she was not going to improve. Finally I advised a sixth operation for the purpose of removing a large portion of the involved bowel and doing an anastomosis. This was done April 26, 1909. Conditions were fully as bad as before. One interesting fact was noted. The Cargile membrane, which had been applied eighteen days before, was practically intact just under the incision, and a small area of three or four square inches showed no adhesions, but the bowels elsewhere were fully as bad as before. After a tedious dissection to determine relations I removed three feet and four inches of the small intestine, a small portion of this being jejunum. The mesentery was ligated off with fine chromic catgut, and an anastomosis made with a Murphy button. The anastomosis was brought as near the surface as possible, Cargile membrane used as before, and the wound was closed down to one stitch. Through the opening left, a small rubber tube connected with a tank of oxygen was inserted and the gas was forced in until the abdomen was distinctly ballooned. After this the tube was removed and the suture tied.

She did fairly well after the operation, but the temperature did not reach normal, but ranged between 100 and 103 for several days, when a discharge of pus took place from the center of the wound. Leucocytosis had been about 10,000. Prior to this event she had frequent nausea and occasional vomiting, and suffered much pain. During this time she had taken only broths, ginger ale and albumen water. There was perspiration at night, a burning-up feeling and chilly sensations. There appeared about a week before the discharge a severe pain in the side of the throat and jaw and in the region of the parotid gland; curiously enough, this disappeared as soon as the pus discharged. The

discharge was free for a few days, and then continued in very small amount for a few weeks, until some of the catgut knots had discharged. Two months after the operation she was physically much stronger, had a good appetite and the bowels moved without cathartics, an experience she had not had in several years. She said she was better and her sister seemed to think she was much better ; but the subsequent events proved this not to be lasting. During the summer she complained more or less constantly. I tried the Bier hyperemic treatment daily, and had her use the Morton wave under the direction of Dr. Collins. Both relieved her temporarily. Finding she was far from well, and thinking some adhesions might have resulted from the abscess, I finally in desperation advised another and the seventh operation, to which she consented. This was performed December 9, 1909. Without going into detail, it is sufficient to say conditions were as bad as I had expected. At the present time she is much discouraged, and I fully share her feelings.

In justification to myself, I must say that I believe there is a considerable amount of uncouscious exaggeration of the unpleasant symptoms. There is not and has not been any abdominal distension at any time, she is well nourished and her facies is not that of a great sufferer.

Dr. I. S. Stone said that he was at a loss where to begin the discussion of the paper; the subject was such a large one it might profitably take up a whole evening session. Dr. Stavely had done well to discuss this subject, and it was unnecessary for Dr. Stone to review the methods of treatment spoken of by Dr. Stavely, as it would be useless to attempt to suggest a cure for the patient whose case had been reported. Experience shows that when peritoneal adhesions form extensively after operations there is a tendency of such adhesions to become persistent, and there is no use trying to prevent them by operations. Experience indicates, also, that there may be many abdomens presenting no symptoms whatever of adhesions, but which at some subsequent operation may be found with the most formidable adhesions. What of the case reported by Dr. Stavely? Dr. Stone believed that the profession is slow to recognize that in such cases there is some chronic and persisting source of infection ; and in such cases he doubted the wisdom of operating for anything less serious than intestinal obstruction. He was inclined to think that the resection was the most beneficial of the methods adopted by Dr. Stavely in the management of the case reported. Dr. Stone

could see no reason for using Bier's method or any other preventive measure directed against the formation of adhesions in clean cases. There is no reason for apprehending adhesions of a vicious character in these cases; we know, on the other hand, that it is natural and physiologic for a certain amount of adhesion to take place whenever the peritoneum is handled, but adhesions of this kind do no harm and probably eventually disappear. With regard to the customary apprehension of surgeons until after the bowels move subsequent to laparotomy, he had labored long under this fear of ileus; but in later years he has been able to sleep comfortably, and he has been happy to leave his patients alone and not hurry the peristalsis. And this feeling of security comes largely from carefully replacing the intestines after operation, with especial care directed to the colon, because he is convinced that intestinal motion takes place entirely *in situ;* that is to say, that peristalsis does not cause a given loop of intestine to bodily change place; therefore, ileus is not to be apprehended if the abdomen is closed with the intestine where it ought to be. He argued against packing the omentum down into the pelvis, because this procedure makes an M-shaped colon, and angulation is thus encouraged Fear of vicious adhesions should diminish just in proportion to the amount of care and precision exercised in the surgical work.

Dr. Bovee was sorry not to have heard the early part of the paper. In the essay no specific had been given for peritoneal adhesions, either for their prevention or for their cure. As Dr. Stone had said, there are some cases which only get worse after every interference. Manipulation and exposure to the air, of peritoneal surfaces, are sufficient to set up the adhesive process. The separation of old adhesions is not always wise, and not all adhesions are vicious; some are the result of natural conservative processes. Where separation of adhesions is necessary, covering all raw surfaces with peritoneum is the proper treatment. In using peritoneum-covered organs for this purpose Dr. Bovée felt inclined to discredit any method which carries the uterus backward, the uterine cavity remaining intact. Proper drainage is one of the most important preventive measures, and in using drainage of the pelvis in women he claimed originality in his method of passing a gauze drain from above downward through the cul-de-sac if the uterus is in place, or, if the uterus has been removed, by passing the gauze into the vagina through the split cervix.

The sensibility of the peritoneum to pain being practically limited to the parietal layer it seemed to him to be the best treatment to separate only those adhesions that cause traction on the parietal peritoneum, leaving visceral adhesions intact.

Dr. Borden expressed his appreciation of the paper and of the discussion. Surgeons are beginning to realize the unity of na-

ture's methods; that wherever injury has been done, nature at once seeks to heal, and always by the same process. The peritoneum is very easily injured, and at every lesion lymph will be thrown out and adhesions attempted; so that, with every abdominal operation great care must be exercised to avoid unnecessary injury to the peritoneum, and plastic intraperitoneal surgery must be undertaken properly to cover in all raw surfaces. In many cases no peritoneal tissue may be available for this purpose, and in such cases some peritoneum-covered organ may be interposed. As to the separation of post-operative adhesions, unless the surfaces can be completely covered with healthy peritoneum the adhesions will reform. In such work surgeons are more and more coming to rely upon physiologic processes; we are passing out of what may be called the pathologic era, an era which involved the use of various artificial means of separating the peritoneal surfaces, such as animal membranes, oil, gas, etc.

Dr. Reichelderfer had recently used a somewhat novel method of treating one of these difficult cases. A woman had had four operations for recurrent adhesions, which resulted from an operation for appendicitis seven years ago. He was led to operate in the hope of relieving this patient of pain and to make it possible for her to work. He found very extensive adhesions in the appendix region, which he succeeded in breaking up with great difficulty; the raw surfaces were covered as carefully as possible with omentum and Cargile membrane. After six months this patient's state was about as bad as before his intervention. He then operated again and found the same bad condition; he again broke up the adhesions, not with the hope of preventing their formation again, but with the hope of helping them to form in such a position as to give the least possible trouble. He therefore closed the abdomen with great care, using a number of stay sutures, and as soon as possible put on a snug binder and got the patient out of bed and allowed her to walk about. After ten months this patient is quite comfortable.

Dr. G. Brown Miller spoke upon the question of drainage. He had at one time been violently opposed to putting in drainage except where it was positively indicated for bad infection. But he has almost reversed his position in this matter. Where there is much oozing it is better to get rid of these fluids by a carefully-devised drain and thus avoid the possibility of secondary infection of exudates and the resulting vicious adhesions. The adhesions caused by the drain itself need not excite apprehension.

Dr. Hooe said that two reasons for the frequent occurrence of adhesions in past years have happily been remedied. The first that suggested itself to him was the old custom of allowing the youngest externe in the hospital to administer the anesthetic; most of the anesthetist's time was taken up in watching the operation, and consequently the patient frequently was only half anes-

thetized and violently coughing and retching, the surgeon being occupied in stuffing back the intestines which persistently escaped through the wound. The hospitals now, almost without exception, employ experienced anesthetists and this difficulty is avoided.

The second improvement has been the elimination of the great numbers of gauze pads for damming off the intestines from the field of operation. By putting the patient in the proper position and by employing a good anesthetist, very little gauze is necessary.

Dr. Tom A. Williams said: The surgeons have told us how persistent are the adhesions which sometimes after pelvic operations mat the intestines together or to the abdominal wall or to the stump after the removal of the appendages. Separation of these adhesions is apparently futile, for by no mechanical or chemical means can their reformation be prevented. Indeed, it is the consensus of surgeons' opinion that each operation merely renders them more extensive, and this in spite of the relief which many patients experience, for a time at least, according to their own story. It is just here that the fallacy lies; for the same relief is confessed to after various electrical treatments. But this, too, is evanescent, and it is very generally believed to be inspired by the patient's own optimism and to give no real physical benefit. The apparent improvement is purely subjective, and is produced by suggestion as a result of the electricity or the surgical operation, as the case may be. To illustrate the power of the mind in such conditions, the case of Harriet Martineau has often been cited. It will be recollected that she firmly believed herself to have been cured of a uterine affection by mesmerism. After her death, however, the disease was found to be still present. Her case illustrates, too, what is not generally appreciated, viz: that clear-mindedness and depth of information in general matters by no means excludes extreme credulity where one's own body or mind is concerned. We see this daily among men of affairs and society women in America. A most striking case of this kind has recently been reported in this country. A patient who had become mentally unsound after measles was gradually restored to apparent health through the quiet and good food at Dowie's sanitarium, and by the prayers and exhortations of an elder who daily visited her. The mother of this girl was so strong a believer in Dowieism that for years she insisted upon affirming her own perfect state of health, maintaining her optimism with the Zionistic literature, while everyone saw that she was failing. Eventually her friends called in a doctor, but the patient refused all treatment except diet. She died a week later, and on post-mortem examination every vital organ was found in a sclerotic state, the stomach being merely a fibrous bag, so atrophied was the gastric mucosa. The cystic duct was blocked by

a gallstone and other stones filled the gallbladder; the liver was sclerosed, the spleen was sclerotic; there were calcareous plaques in the aorta, sclerosis of the valves; interstitial nephritis was present, and the uterus was almost replaced by a mass of fibroid tumors, submucous, subperitoneal and intramural, one being as large as a man's fist. It was impossible that these conditions should not have caused great physical suffering for a long period; but it had all been deliberately ignored by faith. Compared with this woman's sufferings, those of pelvic adhesions are infinitesimal; and if one woman can school herself to withstand this degree of physical suffering, it is evident that with a little training much milder suffering might be well enough borne by many women in whom repeated surgical interference only exaggerates them. Of course, the training needs a certain technique; mere affirmation and encouragement are of little avail.

Neurologists know that, by the method of substitution and diversion, they can make comfortable a large number of patients whose primary reason for consulting them is pain, by which, in many cases, is really meant discomfort. They merely teach the patient how to suppress the consciousness of discomfort; they do not always actually cure the physical conditions at the root of it. I am not here, of course, speaking of the suggested pain of hysteria, or the assumed pains of the seeker for sympathy; these are even more easily removed. I am speaking of the cenesthopathic type of sensations which cannot be removed, but can be neglected, as has been clearly shown by neurological experience with patients who have run the gamut of the gynecological surgeon. Is it not, then, evident that psychotherapeusis had much better be essayed before than after operation?

Dr. Stavely realized that there should be some explanation of his undertaking three operations in the case reported. He had tried by every means to eliminate the idea of neurosis before undertaking the first operation; he had told the patient that he would have to rely entirely upon her statements as to her physical discomfort; that there were no objective signs of obstruction. She was in such a pitiable condition, however, that she welcomed any chance of relief. The second operation commended itself to his judgment as offering a hope of real relief, and the third was undertaken to separate any loops of intestine which might be anchored about the point at which the secondary infection had occurred. Bier's method was used because something seemed to be needed to counteract an unusual predisposition to the formation of adhesions, and there had been good reports of the method in the literature. Moreover, the patient seemed to be helped by it, and she expressed herself as being much relieved.

CHRONIC HEADACHE: NEUROLOGICAL ADVANCES REGARDING ITS DIAGNOSIS AND TREATMENT.*

By TOM A. WILLIAMS, M. B., C. M. (Edin.).

Washington, D. C.

I.—1. The imprecision of the text-books. 2. Recourse to empiricism. 3. Dissatisfaction of both doctor and patient.

II.—1. Pathological researches. 2. The new humoral pathology. 3. The chronic meningeal irritations. 4. Precision in neurological diagnosis. 5. The light it throws on cerebral neoplasm. 6. The limits of psychogenetic disorders.

III.—1. The bearing of the above considerations on treatment.

I.

Those who in conducting original investigations have occasion to consult text books and so-called authorities have been much struck by the manner in which unblushing copying goes on, year after year. An alleged fact, an exploded notion, a demolished theory continues its pernicious course in edition after edition after it has been "scotched" and killed by the accurate research and clear conceptions of the clinic and laboratory of our day. The discouragement from this cause to the thoughtful and careful student is incalculable. Sir Thomas Fraser used to say that it needed twenty years to catch a text-book lie. Thus, on account of the enormous mass and unconnected and irrelevant details which more often than not conflict with experience, the physician who consults a text book when he is puzzled by a case of chronic or recurrent headache has recourse to a purely empirical manner of treatment.

Very often in a case of chronic or recurrent headache the physician, if a dose of calomel fails, begins by giving analgesics before making a diagnosis. If the headache is metabolic the relief obtained is only momentary, and the patient's last stage is worse than the first, for the coal tars seriously interfere with nutrition, and thus add to the burden already borne by the patient's organs. This empirical hit-or-miss therapy is very injurious to the doctor's respect, as failure after failure accumulates. In time he

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also loses the respect of his patient, as to his ability, at least, and the whole situation becomes impossible. The case is labeled functional, neurasthenic, neurotic, hysteric, or whatever name it happens to be fashionable to apply to what is not understood. As a matter of fact, the headache of nervous origin should be quite easy to distinguish from the functional headache due to disorder of the body. The cause of the latter may sometimes escape us and its treatment may fail, but it is none the less physical.

II.

In our student days it was the fashion to laugh at the pathological knowledge of our forebears, the humoralists. But modern study of the blood has changed this attitude, and we now know there is entering a humoral pathology which is becoming more precise daily.

The class relationship, for instance, of the epileptic diathesis to the other toxemias is an accepted clinical fact which has been ascertained by experiment on animals. Moreover, even the cellular elements change their proportions in this condition.

Now it is becoming increasingly evident that there is a very close relationship between epilepsy and migraine; and not only that, but there is no real distinction between the pathogenesis of a definite hemicrania with the classical onset of nausea and vomiting, and perhaps the even commoner occasional headaches, not entirely lateral in distribution, and only occasionally accompanied by definite digestive crises. Moreover, the same kind of treatment is efficacious in each of these three conditions; so much so, that Charles Mercier states, after ten years' experience in the Charing Cross Psychopathic Dispensary, that he can cure *any* case of chronic headache which is not due to organic new formation. While not so sweeping, my own opinion has long had the same turn. I have found chronic headache of metabolic type most amenable, just as Spratling has found many types of epilepsy to be by no means the hopeless matter it is casually supposed.

In treatment, however, one must have the clear knowledge of these nutritional processes and their disorders, and one must understand the relationship of the diet to these. Moreover, one must take into account the relationship of muscular and mental exertions and their adjustments to assimilation; and again, the

psychic factor in nutrition must be regulated. So that the management of a case of chronic headache cannot be learned in a day, or without much reflection.

Not only so, but this type of headache can be foreseen and its occurrence obviated. True, a minute study of the psychical symptoms is needed, which often precede its appearance even for one or two days. I have elsewhere[1] alluded to the research of Mirto in this direction. Two types of the reaction occur—one a depressive, the other expansive. In the former a dull, thick feeling in the head occurs, generally in the morning. The patient may be irascible ; he may feel everything at sixes and sevens, and himself incapable of adjustment. A transition to the expansive state consists of a savage manner, shown by feeling intolerance and energy. On the other hand, the patient may feel unusually clear mentally, collected and capable of the very finest work. He may have a desire to relate humorous experiences, to sing, to go out and spend money, etc. Some one or more of these symptoms is the invariable precursor of a paroxysm of headache in quite a number of cases.

Experimental proof is perhaps lacking, and even laboratory observations are perhaps insufficient to establish the direct relationship of the chronic intoxications which often cause headache, and a condition which often follows these, namely, *le petite Brightisme* of the French writers[2]. It is pretty clear that the latter, however, eventuates in interstitial or diffuse nephritis, and clinical evidence points strongly to the direct sequence of the three conditions—headache, causing toxemia, *petite Brightisme* and chronic nephritis. Moreover, the same type of treatment, while it benefits the terminal conditions, will usually remove the second, and is practically always successful in curing the first.

I need not discuss the symptoms and signs of the latter condition, but I wish to emphasize the blood-pressure index of the toxic state. Its measurement should never be omitted in any case suspected of metabolic disorders, and, as at least 80 per cent. of headaches are metabolic, it would be a safe rule to measure the blood pressure of every patient with chronic headache.

The Chronic Meningeal Irritations.—Meningisme[3] has become a definite clinical and pathological condition. It is usually the cause of the so-called nervous symptoms of exanthemata. The meningeal serosa reacts to the noxa as does the skin. Headache

is usually the earliest symptom of the meningeal implication, although when the process happens to preponderate locally a squint or a focal epilepsy may indicate implication of the cranial nerves or cortex, respectively. Even in these cases, however, nothing may be observed with the naked-eye post mortem, but under the microscope vascular hyperemia, edema or cellular exudation is seen. But we do not need to wait for the death of the patient in order to be pathologically certain, for diapedesis occurs into the arachnoid sac, so that by withdrawing the cerebro-spinal fluid through a lumbar puncture we can ascertain, by counting the cells, that we have to do with an irritation of meninges. The headache is probably due to the increased tension caused by the inflammatory exudation from the meninges.

I have drawn this picture in order to illustrate the mechanism of the headache in the chronic infection of syphilis. The pain in this disease has the same pathogenesis as in that of the more acute infections. Even in the secondary period there is an abundant pouring out of the fluid and small, round cells and a tumefaction of the meninges[4], and it is quite possible that the meningitides of the tertiary period are direct sequelae of this. A few years will settle this, for in very few cases has a series of presymptomatic subarachnoid explorations been made[5]. It is certain, however that a severe chronic meningitis long precedes the clinical manifestation of tertiary syphilis of the nervous system. The prophylactic significance of this is quite important, for with the Wasserman test and lumbar puncture we are now able to anticipate tabes dorsalis and paresis by long periods. The therapeutic power thus given us is illustrated by two cases, too long to cite here, earlier reported[6]. It is true that the diagnosis in these cases did not depend upon the Wasserman test or lumbar puncture, and this brings me to another most important consideration.

Precision in Neurological Diagnosis.—In the first of these cases the diagnosis was determined, primarily, by a modification of the sensibility of radicular distribution, which needs for its determination a most careful neurological technique in order to avoid the sources of error inherent in exploring the sensations[7]. The problem was to find the cause of a general infirmness and disability, headache, which had occurred without apparent cause and was of irritative character not usual in merely metabolic cephalalgiae.

The diagnosis was made even more precise by psychological examination.

In the second case psychometry was the means used for the diagnosis.

Now a neurological examination means a careful comparison of the motor functions on each side of the body by a series of test movements which clinical experience has shown to be the most convenient. It requires a careful estimation of the sensory acuteness of the patient, who must be placed in condition of position, temperature and psychic relationship favorable to the functioning of his perceptions[7]. The function of equilibration must be investigated by a series of tests with which recent work has furnished us[8]. The various reflexes and the delicate nuances they reveal require particular attention. All these visible somatic reactions require for their appreciation a technical training just as arduous as that of the surgeon or bacteriologist. A neophyte can no more be trusted to form an opinion about an abnormal sensation, movement or reflex, or can a beginner be trusted with the Wasserman reaction, than can a tyro safely enter the pelvis or abdomen or cranium.

But the psychological examination is even more difficult. The sources of error are innumerable, and only the most rigid attention to detail and critical care can prevent gross mistakes[7]. In this field much remains to be done, and even specialists strongly feel their own imperfections in this branch of clinical investigation.

Brain Tumors.

The affection in which the application of this lesson is most striking is intracranial neoplasm. It can be safely postulated that any case of chronic headache which resists the general regulation of the metabolic activity, where the blood pressure is not markedly increased and which does not appear to be syphilitic or psychogenetic, should be submitted at the earliest possible moment to a thorough neurological examination, including minute investigation of the psychic functions, long before papilla edema or the inroad of a new growth in the cranium can cause a modification in the functions of some center or tract. This can be ascertained by one of the number of tests the neurologist employs, even at a time when it has not yet caused the patient any in-

convenience aside from the headache, and is not apparent to a cursory examination. The tremendous importance of early diagnosis of these cases is becoming more and more apparent through the advance of cranial surgery[9]. The decompressive operation, in particular, in even the gravest case may so alleviate pressure as to maintain life and preserve the sight until at a later date radical extirpation of a growth becomes possible.

Thus Collier has shown (*Brain*, 1904) that when severe intracranial pressure has occurred, it often completely masks focal symptoms which at first would have made the diagnosis easily possible. For example, the hemianopia of a growth in the occipital lobe cannot be detected after the patient is blinded by a choking of the disk with the edema of increased tension within the dura. Again, a growth in the cerebellum in expanding may compress the pons, and by pushing it away from the mid-line produce cranial nerve symptoms on the opposite side and thus mislead our diagnosis. Had the patient been seen earlier a neurologist would have detected cerebellar symptoms in their uncomplicated incipiency.

Headache, with inversion or interlacement of the visual color fields for blue and red and contraction to white, is not hysterical, as has been so long supposed. These signs are pathognomonic of increased tension, and in cerebral tumors Cushing and Bordley have found them nearly always.

The Neurotic Headache.

The term "nervous" headache should be applied only to one of psychogenetic mechanism; that is to say, one coming on in consequence of a mental or psychological cause. Moreover, a fertile source of error here lies in the imprecision of the patient's descriptions[10], and the name headache is often carelessly applied by a doctor who has not analyzed the patient's account or cross-examined him as to his sensations.

The so-called headaches typical of the psychasthenic state, for instance, are much more in the nature of a discomfort and annoyance than of an actual pain. Sensations of heat, cold, dragging, swelling to the point of bursting, twitching, gnawing, weight or emptiness, are frequent. The localization of these sensations has not the least importance. An interpretation of each sensation

has been sought in the visceral sensations which it is supposed every organ communicates, the brain included[11]. The function is known as cenesthesis, but it is difficult to demonstrate this. It is pretty sure that actual pain is meningeal in origin, and that it is due to tension of the cerebral-spinal fluid, and that it is a purely physical modification; although the circulatory changes which may, at least, aggravate any perturbations in intercephalic tension, can arise psychically; that is, by mental impressions or emotions. There is no direct evidence, but may there not be a blush of the brain? It is quite certain, clinically, that some cases of headache are immediately provoked by painful emotion.

One must be careful to distinguish this[12], which is a real physical change of state, from the purely imaginary suffering of the true hysteric[14], who, from the intensity of her idea of pain, actually persuades herself that she is suffering pain, which is not the case, except in so far as her power of representation creates the delusion. This type of case, which as regards headache is rare, must be distinguished from the affectation of pain[13] in which even the patient does not really believe, but which is assumed to excite commiseration. The word topoalgia has been applied to the non-simulating type.

The apparent hyperalgesia of the painful regions is apt to cause confusion with a neuralgia, but in the latter the distribution conforms to that of a peripheral nerve, while the topoalgic area is that of a region, and, moreover, is sometimes variable. It may be constant or it may occur in crises, lasting hours or days. Careful anamnesis will nearly always detect in these cases certain phobias and a history of intellectual ruminations, tics or besetments. The technique in eliciting the obsessive psychosis is too long to insist upon here. It needs to be carefully distinguished from hysteria, for its treatment differs completely[12], as well as from the organic states which the practitioner first thinks of when bodily functions are the subject of the patient's prepossessions.

I say nothing of the headache of ocular strain or of that due to referred pain, for they are by this time well known, I imagine, to every physician; and there has been, indeed, a tendency in the former to exaggerate its importance. The latter is comparatively uncommon, and even when chronic, occurs only occasionally in exacerbations.

III.

We have now considered the common forms of chronic headache; and we have found new light from humoral pathology, neurological cytology, microscopical anatomy, the work of surgeons on the cerebrum, and, finally, psychological analysis of the subjective symptoms.

The therapeutic bearing of what I have said has been indicated, *en passant*. Its chief lesson is the enormous importance of a clear diagnosis, from which follow the only scientific and rational indications for treatment; and it is only in this way that any considerable measure of success can be attained in curing cases of chronic headache. I cannot pretend, in a short paper, to even summarize the treatment of the pathological conditions and the various indications drawn from due consideration of chemical pathology, pharmaco-dynamics, surgery and psychiatry, but I shall have attained my object in reading this paper before you, if I convince you that in the great majority of cases of chronic headache there is a way out, and that we have the power to find that way; that we need no longer search the road by trying, as we reach it, each opening in the maze until we either find the right one or the patient passes out of our hands; and, moreover, that we may have now a more certain procedure of which to avail ourselves if we only choose to use the methods now placed in our hands in neurological diagnosis.

References.

1. Psychoprophylaxis in Childhood; *Jour. Abnor. Psychol.*, June, and in Psychotherapeutics, The Gorham Press, Boston, 1909.

2. See Dieulefoy, Leçons Cliniques, 1907.

3. Widal, *Soc. de Biol.*, Paris, 1906, etc.

4. Author's Editorial in *Med. Record*, 1908; also, *Int. Clinics*, Spring, 1910; also Jan. 29, 1910; and *Amer. Jour. Med. Sci.*, March, 1910.

5. See Vincent, Les Meningites Chroniques Syphilitiques, Paris, 1910. (To appear.)

6. Ditto; also author's forthcoming article in *Medical Record*, Jan., 1910.

7. Author, Psychometry in Diagnosis, *International Clinics*, July, 1909. See also forthcoming reports in *Va. Semi-Monthly* and *Therapeutic Record*; also *N. Y. Med. Jour.*, Jan., 1910; also The "Sensibility" in Diagnosis, *Amer. Jour. Med. Sci.*, April, 1909.

8. Babinski, Fonctions de l'Appareil Cerebelleux et de leurs Perturbations, Paris, 1909; also author, *Archives of Diag.*, Jan., 1910.

9. Horsley, Advances in Cerebral Surgery, *Brit. Med. Jour.*, 1906; also various articles by Frazier and Cushing in American journals.

10. Raymond et Janet, Les Obsessions et la Psychasthenie, 1903.

11. Dupré et Camus, Les Cénésthopathes; L'Encéphale, 1908.

12. Author, Neurasthenia and Affections for which it is Sometimes Mistaken, *Charlotte Med. Jour.*, June, 1909; also *Archives of Diag.*, Jan., 1909, also *Jour. Abnorm. Psychol.*, March, 1909.

13. Author, The Diagnosis of Hysteria from Psychasthenia, *New Orleans Med. Jour.*, June, 1909.

14. Also *Int. Clinics*, autumn, 1908; also *Bost. Med. Jour.*, March 25, 1909.

Dr. P. C. Hunt said that the time was short and the paper had covered a wide field; it was, therefore, impossible exhaustively to discuss it. The gist of the paper, it had seemed to him, was: find the cause of the headache and remove it. The inclusion of the term "functional headache" in Dr. Williams' classification did not seem to Dr. Hunt to be a good one; functional headache is, in his opinion, non-existent. The time will come when no "functional symptom" will stand the test of scientific scrutiny. The neurological methods in the diagnosis of headache were omitted from the paper, and, therefore, could not be discussed.

Dr. Williams merely wished to add that Cushing has recently made the observation that the inversion of the visual field in which the field for blue becomes smaller than or interlaced with the field for red—a reversal of the physiologic state—instead of being a stigma of hysteria is really a stigma of increased intracranial pressure, often due to intracranial neoplasm or chronic nephritis. Other neurological signs should then be sought.

Public Meetings for the Discussion of Medico-Political Subjects.—The American Medical Association has inaugurated the policy of holding meetings attended by the general public for the discussion of questions of joint interest to the medical profession and the public. These meetings have already been productive of much good, and when they become more general a better understanding and a more effective coöperation will result. It is urged that every member of this Council, through his auxiliary committeemen in each county, have meetings of this character called for the purpose of discussing with the public—and actual discussions—not formal, one-sided speeches should be encouraged on such subjects, for example, as those that will engage the attention of this conference. In this way, better than in any other yet adopted, the public will be put in a position intelligently to demand such popular health legislation as will best subserve the general welfare.—*Jr. A. M. A.*

GALLSTONE DIABETES; CASE AND SPECIMEN.*

By W. P. CARR, M. D.,

Washington, D. C.

I wish to report the case of a lady 52 years old, married, referred to me by Dr. Grasty for operation for gallstones. She had good health until last fall, when she had an attack of biliary colic. Soreness and tenderness in the region of the gallbladder persisted.

I saw her with Dr. Grasty January 9, 1910. She had been confined to bed for two weeks with pain and tenderness in the region of the gallbladder, and had vomited continuously for several days. She was much jaundiced and constipated, with pale, chalky stools. The diagnosis of obstruction of the common bile duct was plain; probably due to gallstones. We feared, however, that there might be malignant disease of some organ in that region. She was admitted to the George Washington University Hospital, and urinalysis showed the presence of 5 per cent. of sugar in the urine.

January 10th she was operated on. There were many old and firm adhesions around the gallbladder, especially between it and the greater omentum. These adhesions were not disturbed. The gallbladder was distended with about 8 ounces of rather pale, ropy bile, and a single large gallstone about the size and shape of an English walnut was found in the common duct. The stone was readily removed through an opening in the fundus of the gallbladder, as the duct above it was greatly distended. The head of the pancreas was slightly enlarged and somewhat harder than the body of the organ. Careful search was made for other causes of obstruction, but none was found. Bile did not flow into the gallbladder for some time, but did flow pretty freely before the wound was closed. A large tube was fastened in the gallbladder and the abdominal wound closed around it.

She did remarkably well, except that for nearly a week very little bile came through the tube, and she complained greatly of nausea, which she said was caused by excessive flow of thick, ropy saliva. This she expectorated, or wiped from her mouth continuously for four or five days, and during that time she vomited

* Read before the Medical Society, February 2, 1910.

frequently the same kind of matter. This excessive salivation was finally controlled by hypodermatic injections of morphia and atropia, and later by atropia alone. But it was more than a week before they could be entirely stopped. In the meantime her pulse and temperature were practically normal, and her stools showed bile in good quantity. By the tenth day she was sitting up in bed, comfortable, with a keen appetite, bowels moving daily and showing plenty of bile; her urine still contained 5 per cent. of sugar.

January 26th, sixteen days after operation, the urine contained 2.5 per cent. of sugar; the drainage tube was removed because the bile seemed to be passing so freely into the bowel; otherwise I should have left it longer, for the benefit of the pancreas. On the nineteenth day the dressings were changed; there was no bile stain. The wound was healed and the opening of the drainage tube was completely closed. She was allowed to go home.

This was an interesting case to me for several reasons, and I think it a very instructive one. First, because the adhesions about the gallbladder seemed to be at least a year or two old, and yet the first symptoms dated back only three months. Secondly, the large size of the stone for a common duct stone, and the enormous dilatation of the common duct down to the place where it passed behind the pancreas. This stone which I present for your inspection is evidently formed by the amalgamation of a number of smaller stones and must have required a long time to form and work down into the common duct. Thirdly, that this could have happened without causing great pain seems almost impossible; and yet this case is not unique in this respect. Fourthly, the manner in which the stone caused a pancreatitis and finally complete obstruction of the duct is interesting and instructive. I doubt if this stone was far enough down in the ampulla of Vater to cause obstruction below the point of entrance of the pancreatic duct, thereby forcing bile into the pancreas. If not, it must in some way have caused deformity or malposition of the ducts so as to bring about this result. I can readily understand how this might happen, either through mechanical irritation of the head of the pancreas, on which it pressed, or by distortion consequent on the extreme dilatation of the common duct. Possibly a smaller stone, lower down in the ampulla of Vater, caused the pancreatitis, and this stone may have passed into the bowel during the last attack of pain.

At any rate, this case is another illustration of the fact that gallstones may exist a long time and cause great damage to important organs without giving rise to any symptoms pointing to their presence. There can be no reasonable doubt, I think, that n this case they had been present in the gallbladder or ducts for years; that they finally caused pancreatitis and consequent diabetes. That this diabetes will now disappear is probable, as there has been considerable improvement already. But when such a pancreatitis exists long enough to cause permanent damage to the islands of Langerhans the diabetes may be incurable. So many cases of chronic pancreatitis have been reported of late in connection with biliary obstruction that it leads us to wonder if this is not the most common cause of diabetes mellitus. Certainly I think that the occurrence of sugar in the urine should lead us to examine very carefully into the condition of the bile ducts and pancreas.

Dr. Legrand Guerry has advocated very strongly doing a cholecystenterostomy in all gallstone cases where there is any doubt of the patency of the common duct and in cases where the pancreas seems enlarged or unduly hard. I believe this is excellent advice, and would have followed it in this case but that it would have necessitated such extensive separation of adhesions as to make it dangerous. Cholecystenterostomy, however, is the only hope in many cases of chronic pancreatitis, as drainage of the bile through an external wound cannot be continued long enough in many cases to effect a cure. This operation will undoubtedly be more frequently done in the future, and may prove to be the operation of choice in many cases of glycosuria.

Unmistakable Evidence.—A witness in a railroad case at Ft. Worth, asked to tell in his own way how the accident happened, said:

"Well, Ole and I was walking down the track, and I heard a whistle, and I got off the track, and the train went by, and I got back on the track, and I didn't see Ole; but I walked along, and pretty soon I seen Ole's hat, and I walked on, and seen one of Ole's legs, and then I seen one of Ole's arms, and then another leg, and then over on one side Ole's head, and I says, 'My God! Something muster happened to Ole!'"—*Everybody's.*

REVIEW IN THERAPEUTICS.*

By NOBLE P. BARNES, M. D.,

Washington, D. C.

Passing from incantations and superstitions to powdered shoe-soles and earthworms, therapeutics makes its snail-like progress up to the late "shotgun medication," and later "one drug artist," with the vain hope that some preparation of real or alleged virtue, in the arsenal of remedial agents, might meet the conditions of more or less clever guessing.

This has been called the age of drug nihilism, but I prefer to term it the era of pessimism *versus* optimism. Leaders on both sides, with their followers, have been engaged in spirited if not always courteous debate, and from the controversy we have developed the new era, the real golden age, the age of rational therapeutics.

Osborne regards the two extreme attitudes on the part of physicians toward the treatment of disease as the greatest impediment to advances in scientific therapy. "On the one hand," says Osborne, "stand numbers of practitioners who hasten into print; lauding the satisfactory results of first one treatment and then another, generally medicinal, of first one and then another disease. Many times these same optimistic physicians will the following year be found lauding an entirely different treatment from that they advised and found so successful the preceding year.

"On the other hand, there is a large class of clinicians whose names are significant of the best in medical research, and whose teachings are listened to with respect from one end of this country to another, but who are so pessimistic as to the treatment or the management of disease as to prevent the scientific investigations necessary to develop common sense and rational therapy." The practice creed of these is to "diagnose much, to theorize much, to charge much, to treat little and let nature do the rest. Good old Nature!"

Even orthodox ministers have taken pity on these therapeutic nihilists, and, although they know nothing of physiology or pathology, they have been acknowledged by these same leaders as superior therapists.

* Read before the Medical Society, November 17, 1909.

"Good practitioners are always found to be men entertaining the greatest confidence in the power of medicine," said Bartholow in 1876.

"Be skeptical of the pharmacopœia," and "He is the best doctor who knows the worthlessness of most drugs," says Osler in 1907.

Taking up this address to London students, Jacobi exclaims: "Expectant treatment is too often a compound of indolence and ignorance. Verily, I tell you it is malpractice, it is no treatment. It is the sin of omission, which not infrequently rises to the dignity of a crime."

Whether from change of heart or from recent advances, the Osler of 1909 has something more encouraging to say in his recent "Treatment of Disease"[1] that will carry its full measure of influence in the right direction.

"The student," he says, "should follow most carefully the action of those drugs the pharmacology of which he has worked out in the laboratory. He should be sent out from the hospital knowing thoroughly how to administer ether and chloroform. He should know how to handle the various preparations of opium. He should study with especial care the action of digitalis on the circulation in cases of heart disease. He should know its literature. It should be taken as the typical drug for the study of the history of therapeutics. He should day after day personally give a syphilitic baby inunctions of mercury; he should give deep injections of calomel, and he should learn the history of the drug from Paracelsus to Fournier. He should know everything relating to the iodids and the bromids, and should present definite reports on cases in which he has used them. He must know the use of the important purgatives and he should have a thorough acquaintance with all forms of enemata. He should know cinchona historically, its derivatives chemically and its action practically. He should study the action of the nitrites with the blood-pressure apparatus, and he should over and over again have tested for himself the action or the absence of action of strychnin, alcohol and other drugs supposed to have a stimulating action on the heart and bloodvessels."

This is only an example of the promised renaissance of therapeutic zeal that is arriving just in time to save for the medical doctor that portion of practice that has not already drifted to the various other learned professions.

"Investigate remedial agents," should be the slogan of the Committee on Revision of the Pharmacopœia. This important work is just beginning, and will doubtless weed out many useless preparations and dignify others of real value. Individual suggestions, as those made by Barton on "Pharmacologic Fetichisms," will awaken interest in the profession.

By way of illustrating optimistic and, therefore, unreliable reports of remedial agents, Dr. Ussher[2] makes the following extravagant claims for calcium sulphide. Manufacturers of elegant pharmaceutical preparations, please take notice: "Calcium sulphide will disinfect and bring about absorption of even large quantities of pus, and will prevent pus formation." "It is a specific and prophylactic for various infectious diseases, even as a prophylactic of smallpox in the absence of vaccination."

As Gotthiel[3] suggests, "An extra medical observer studying the files of our professional journals would conclude that there are few, if any, incurable affections, and that the chief difficulty of the modern therapeutists is the selection of one among the many curative measures that are recommended. How far the facts are in accord with this each one of us can judge from personal experience."

The discovery of coal-tar products, especially of the type of antipyretics and analgesics, profoundly influenced medical therapeutics for a short time. Indiscriminate employment of these agents soon reduced their dosage and their usefulness. Many of us have felt secure in employing the official *pulvis acetanilidi compositus*, but even this combination has had the caffeine prop knocked out by recent investigations of Hale[4], who by extensive animal experiments has shown that more profound and more rapid symptoms of intoxication follow the administration of the combination than by a similar or even double dose of the acetanilid alone.

Dr. A. Curei, Sicily, at the 16th International Congress discussed "The Physiological and Therapeutic Importance of the Alkalies and the Alkaline Earths." His views are contrary to the common teaching in many respects. He maintains that potassium stimulates the muscular elements of the heart and vessels. Likewise, he considers rubidium, cerium, thallium, calcium, strontium and barium as cardio-vascular stimulants.

Lithium, he claims, is a nerve stimulant and has no action on

the muscular tissue. His article is pregnant with untested theories.

In severe cases of anemia in infants Morse[5] recommends giving the aqueous solutions of iron citrate subcutaneously. The drug is put up in pearls and sterilized, each pearl containing a single dose; remains sterile indefinitely. This solution is non-irritating, although pain sometimes follows the injection but lasts less than an hour. A glass syringe with asbestos packing and a platinum needle are necessary; the usual aseptic precautions to be observed. The dose given by Morse to infants averages three-quarters of a grain every other day. The results are more marked and are obtained more rapidly than when the drug is given by the mouth.

Harris[6] advocates the hypodermic injection of iron, arsenic and mercury in small doses as a treatment for inoperable cancer. He has had prepared glass aseptic ampoules containing arsenic trioxide, grain, one-fortieth, and iron citrate, grain, one-third, in fifteen minims of distilled water. This combination would also be useful in treating anemia.

G. W. Young[7] reports three cases of malaria successfully treated by deep injection into the gluteal muscles of ten-grain doses of quinine hydrochlorate.

From the State Prison of the Philippines comes the following report of intramuscular injections of mercury succinimide in .013-gram doses increased to toleration. Twenty prisoners were placed upon this treatment, and the report ending June 30, 1909, shows that three of this number, or 15 per cent., had been returned to duty, 35 per cent. died and the remainder, or 50 per cent., were still under treatment, without any marked improvement. In one of the cases that returned to duty it is interesting to note that the weight was ten pounds less than at the time he was placed under treatment; so that the cure would, no doubt, be questioned. It may also be worthy of notice to state that the percentage of cures is smaller than that occurring among prisoners who are given the ordinary open-air and symptomatic form of treatment.

H. Hallopsen[9] employs local with general treatment in an attempt to abort or attenuate the virus of syphilis. For the former he injects at the seat of the ulcer, or in the neighboring lymphatics, atoxyl or one of its derivatives. These injections are

made daily for forty-two days. This will prevent the roseola and other symptoms. Internal treatment of mercury and potassium iodide is put into practice from the beginning. By this treatment he thinks we will be able to prevent generalized syphilis, tabes, paralysis, etc.

E. Lustwerk[10] reports remarkable results from the subcutaneous administration of iodipin. Gonorrheal sciatica, syphilitic optic neuritis, tabes dorsalis, arteriosclerosis and other equally troublesome conditions were, according to the statements, either cured or much improved.

Ohlmacher[11] follows Littlejohn's report of the use of calcium salts in the treatment of epilepsy with a case in which he was using the calcium lactate in doses of 7 to 10 grains three times a day to fortify the defective coagulability that was causing frequent nose bleed following the attack of *grand mal.* This case was having from thirty-four to seventy-three attacks a month. The coagulation time of the blood was soon reduced to normal, and the attacks of epilepsy ceased three months later. Further observations are needed and will no doubt follow this report.

In a series of twenty-one nutrition cases, containing nine cases of inanition during the first week of life, La Boutillier[12] reports marked improvement in gastro-intestinal conditions, with a gain in weight varying from one-half to one ounce daily, by employment of subcutaneous injections of sea water, as recommended by Robert-Simon. The cases with secondary bronchitis showed a rapid clearing, and those of hereditary syphilis improved more rapidly than before under specific treatment. In all cases there was improvement of digestion and nervous symptoms.

Considering the treatment of amebic dysentery at the recent International Congress Anders and Rodman speak of ipecacuanha as generally, but not invariably, exerting a marked beneficial effect, causing the amebae to disappear rapidly from the dejecta, especially when the ipecac is given in salol-coated pills. They question the efficiency of rectal lavage, and report a case in which appendicostomy, followed by irrigation with solutions of quinine, resulted in a remarkable cure.

From their experiments Heineberg and Bachman[13] conclude that intestinal antiseptics interfere with and retard digestion in the stomach and probably in the intestines. Beta-naphthol,

salicylic acid, sodium sulphate and thymol they regard as being most active.

Since Gillhorn's first paper[14] on the treatment of inoperable carcinoma of the uterus by acetone, favorable reports on its use have been published by Palano, Heckel, Semon, Dorset, Mair and others. Tovey[15] speaks of its use in sixteen cases with very satisfactory results. Summers[16], in his recent address on surgery, gives the following technic for its use: "First curette thoroughly and dry carefully, then pour one-half ounce of acetone through a Ferguson speculum (with patient in Trendelenberg position). Leave this in for fifteen or twenty minutes, then let the acetone run out and pack the cavity with gauze soaked in acetone. Wash the vulva and vagina; insert tampon. In rectal cancer follow a like practice, only first introduce a tampon above the growth before using acetone. Repeat the use of acetone two or three times a week in office practice. Protect the vulva with vaseline. By this treatment the oozing is checked and the wound surface is covered with a thin, white film. The odor is remarkably reduced. The discharge is at first watery and then disappears. The wound shrinks and tends to heal. The health improves. The opsonic index is raised."

Wallhausen[17] reports two cases of multiple hemorrhagic sarcoma successfully treated by local applications of solution of mercury bichloride, one to two thousand, increased gradually to one to five hundred, applied as wet compresses.

Interesting from an etiological as well as a therapeutic standpoint is King's paper on diabetes[18], read at the last meeting of the American Therapeutic Society. He regards diabetes as an infectious disease, having found in sixteen cases the yeast fungus (*saccharomyces cerevisiae*) in the blood.

He takes a drop of blood from a finger which has been made sterile, and not only finds the yeast fungus under the microscope but has been able to grow the fungus in culture fluids. He has also found by a study of the opsonic indices that when the patient is doing well his opsonic index is high; when the patient is debilitated, miserable and losing ground his opsonic index is low. He has also found that hypodermatic injections, at intervals of from three days to a week, of from five to fifteen minims of the fluid, produced by a twelve-hour growth of the fungus (of the strength of 100,000,000 of dead fungi in fifteen minims of sterile

salt solution), have raised the opsonic index and improved the condition of six patients. From his investigations King says: "Because diabetes is a disease of fermentation; because the yeast fungus is often found in the blood; because its actions explain all the symptoms as well as the pathologic conditions; because the patient shows a disturbed power of resistance to this fungus; and, because this lowered resistance is increased by treatment with vaccine, I believe this yeast fungus is the cause of diabetes and that it should be treated as an infectious disease." His general treatment by diet, for the amelioration of symptoms, and the condition of acidosis, are the same as are so well understood, and have been recently considered before this Society by Fry and before the local Therapeutic Society by Kauffman.

Simpson[19] concludes his article "Clinical Experiences with Calcium Lactate in Hemorrhages of the Upper Air Tract" with the statement: 1. That calcium lactate has a controlling influence in hastening the coagulation of the blood; 2. Its efficiency is more marked in hemophilic cases; 3. In all cases of operation for the removal of tonsils and adenoids calcium lactate should be given for a period prior to and after the operation."

The subject of internal hemostatics has been recently reviewed before this Society by Barton[20] in a thoroughly scientific and up-to-date manner.

Pellagra has been arousing the attention of the profession and public, and shows the disease to be present in some localities in the North and Middle West as well as widely distributed throughout the South. Lavinder, of the U. S. Public Health and Marine Hospital Service, gives a brief review of the subject in the Public Health Reports[21]. Under therapeutic measures he recommends a liberal diet; baths and cold douches for cases with nerve and skin manifestations. He has found arsenic a valuable remedy, and sodium chloride of service. Transfusion of blood from cured individuals to the sick has been tried with apparent success.

Cole and Winthrop, at the recent conference on pellagra (November 3 and 4, 1909), discussed the therapeutics of the disease. In the nine cases reported, strychnine, iron carbonate and forced feeding were employed. The main treatment was transfusion, which was followed by immediate improvement and marked gain in weight. This leads us to anticipate the establishment of serum therapy for this disease.

Possibly of most general interest is the treatment of hookworm disease. Stiles, in Public Health Reports, suggests the devotion of Sunday to the administration of thymol for those patients who cannot afford to lose time from work. He emphasizes the danger of oils or fats or alcohol, if taken during the treatment, and speaks of one case of serious thymol poisoning following the taking of a copious drink of milk the same day thymol was taken. The details of treatment he gives as follows:

"1. *Position of Patient.*—The patient should be instructed to lie on his right side immediately before taking the drug and to remain in that position for at least half an hour after. The reason for this is that many of these patients have enlarged stomachs, and if they lie on their right side the drug has the benefit of gravity in passing rapidly from the stomach to the intestine; but if any other position is assumed the drug may remain in the dilated cardiac portion of the stomach for some hours and result in considerable complaint on the part of the patient and delay of the drug in reaching the worms.

"2. *Time of Dosage.*—The time of giving and size of dose should be arranged on one of two plans, depending on existing conditions.

"(*a*) The plan usually followed is: At 6 A. M., one-half of the total dose of thymol; at 8 A. M., one-half of the total dose of thymol; at 10 A. M., Epsom salt (never castor oil).

"(*b*) If the case is an especially severe one, or if the patient has, on the first Sunday's treatment, complained of burning or other effects of thymol, the following plan is adopted: At 6 A. M., one-third of the total dose of thymol; at 7 A. M., one-third of the total dose of thymol; at 8 A. M., one-third of the total dose of thymol (if unpleasant symptoms, as a sensation of severe burning in the stomach, have appeared this third dose should be omitted); at 10 A. M., Epsom salt (never castor oil).

"3. *Food.*—No food is allowed until after the 10-o'clock dose of Epsom salt, but the patient is permitted to take a glass or so of water after the thymol, if he desires.

"4. *Thymol.*—Finely-powdered thymol in capsules, preferably in 5-grain capsules, should be used. Before being powdered the thymol should consist of colorless translucent crystals.

"5. *Age.*—The dose should be adapted to the apparent age and strength of the patient. The following represent the maximum amount to be used during one treatment: Under 5 years old, 7½ grains; from 5 to 9 years, 15 grains; from 10 to 14 years, 30 grains; from 15 to 19 years, 45 grains; from 20 to 59 years, 45 grains; above 60 years old, 30 to 45 grains. Total dose to be divided as indicated in Paragraph 2.

"*Repetition of Treatment.*—The foregoing treatment is repeated once a week, preliminary treatment Saturday evening and thymol on Sunday morning, until the patient is discharged.

"*Duration of Treatment.*—To recognize whether the parasites are all expelled, and therefore to determine when to end the thymol treatment, either of two plans may be adopted, namely:

"(*a*) Microscopic examination: On Saturday morning ten microscopic preparations of a fresh stool should be made. If eggs are still present the treatment is repeated; if eggs are not found the thymol is discontinued. It takes about forty to sixty minutes to make this examination of ten slides thoroughly.

"(*b*) Cheese-cloth method: A much easier way of recognizing the completion of the treatment, and for practical results nearly as satisfactory as the microscopic examination, is to instruct the patient to wash all of his stools Sunday, Monday and Tuesday through a cheese-cloth and to keep the cheese-cloth moist and bring it to the office on Tuesday. While the fecal material will wash through, the worms will be retained in the cloth. Treatment is continued as long as worms are found in the cheese-cloth.

"*Other Treatment.*—If desired, iron may be administered on the days on which the thymol is not taken. It is a good plan, however, not to give iron during the first week, for it is quite important to convince the patient that the thymol treatment is the one which is really accomplishing the lasting good. If the drug is taken Sunday the patient is likely to begin to feel some benefit by Wednesday or Thursday; his family is likely to notice it on Thursday or Friday. If iron is given during the first week the conclusion may perhaps be drawn by the patient that it is really the iron which is causing the improvement, and he may discontinue the thymol. Of the two the thymol is, of course, the far more important, for it reaches the parasite, while the iron reaches only the patient."

Organo-therapy has been receiving the usual amount of attention, and most men today have a wholesome regard for the internal secretions and realize how they may be influenced by medication. They also appreciate the medicinal virtue of certain glandular extracts, but the whole subject requires more time than can be given in a brief review. I would refer those especially interested to Osborne's last article, "Disturbance of the Internal Secretions Clinically Considered" (16th International Congress), and Browing's "Internal Secretions and Animal Therapy."

Levi and Rothschild[22] report the use of thyroid in thirty-seven cases of so-called chronic rheumatism. The ages of the cases

varied from 12 to 60 years, and they were under observation for three years. Of these cases ten were chronic deforming rheumatism, five had been bedridden for years. Nine cases had subacute exacerbations, ankylosis, deformity and persistent pain. Of the 17 severe cases 14 improved as regards pain, deformity and use of joints, while two were completely cured. Of the 20 other cases of milder type and shorter duration 18 were improved or cured. The results were most favorable in younger patients and in the more recent and less chronic disease. The daily dose of thyroid was from one and one-half grains to four and one-half grains of the dried gland powder, equivalent to five times as much of the fresh gland.

Lees[23] regards rheumatic fever as a specific infectious disease, and attributes to the salicylates a specific action against the microbe. He advises a more liberal use of sodium salicylate, both in regard to the dose and length of treatment. The addition of sodium bicarbonate in amount double that of the salicylate he believes is the best means of diminishing the unpleasant effects of the salicylate.

N. S. Davis[24] (*A. M. A.*) regards sodium salicylate as the nearest approach of a specific for rheumatism, but believes the addition of the alkaline treatment assists in preventing cardiac complications. He institutes this portion of the treatment by giving in place of water a charged solution of sodium bicarbonate or effervescing sodium and potassium citrate.

Most recent writers express the belief that the success of salicylate treatment of acute articular rheumatism depends upon sufficient dosage. As quinine for malaria or mercury for syphilis, just so is the salicylate regarded for the infectious rheumatism, and, like the other drugs, must be given for effect. In mildly acute and subacute cases a daily dose of 150 grains may be sufficient, but in some severe cases it may be necessary to increase the amount to 350 or 400 grains a day. Reported cases of chorea have received from 250 to 400 grains daily.

"The Obliteration of the Craving for Narcotics," by Lambert[25], is worthy of careful perusal. Also, "The Three-day Treatment of Drug and Alcohol Habitues with Hyoscine," by Riewel[26]. There are more than a hundred papers or reports on anesthetics or anesthesia, but a survey of these would take up the time allotted to one review. The experiments of Henderson,

as presented to the Am. Ther. Soc., are deserving of more than passing notice. Considering the prevention and treatment of shock, he suggests:

"1. Severe pain should never be allowed; it should be prevented by enough of the narcotic which seems indicated in the individual case.

"2. Anesthesia should be complete, both before beginning operation and during it.

"3. In abdominal operations moist warm cloths should not be applied to the intestines, and, except in the exact region of operation, the intestines should be protected with some covering that will prevent the exchange of gas from the intestines with the external air.

"4. A tank of carbon dioxid gas should be at hand to perfuse through warm water to be directed into the abdominal cavity, if shock occurs during abdominal operations.

"5. If shock occurs after operations or after other injuries, transfusion into the veins of physiologic saline saturated with carbon dioxid should be done. Also, at any time during shock, air or oxygen, with moderate amounts of carbon dioxid should be inhaled.

"6. Whenever there is likelihood of pain following the recovery of the patient from anesthesia, morphin should be injected to prevent it.

"7. However valuable strychnin injections may be as a stimulant to the nerve centers and as a stimulant to general metabolism to perhaps promote normal cellular activity and perhaps, therefore, the production of a normal amount of carbon dioxid, excessive amounts of strychnin as a cardiac and respiratory stimulant in shock should not be used. Large doses of strychnin, or strychnin repeated too frequently, seem to interfere with the normal diastole of the heart and prevent the normal filling of the heart cavities and, therefore, the normal output of the heart into the arteries. Henderson seems to have shown that such cardiac stimulants cannot increase the output from the heart cavities."

The subject of vaccines and serums is likewise of limitless proportions and is purposely omitted, as it will be covered in another paper.

1. *Brit. Med. Jour.*, July 24, 1909.
2. *Medical Record*, N. Y., Sept. 25, 1909.
3. *Jour. A. M. A.*, Nov. 21, 1908.
4. *Jour. Pharm. and Exper. Therapeutics*, Aug., 1909.
5. *Med. and Surg. Journal*, July 10, 1909.

6. *Jour. A. M. A.*, Sept. 25, 1909.
7. *Lancet*, London, Sept. 11, 1909.
8. Whitmore and Christensen, *Med. Rec.*, Sept., 1909.
9. *Gazette des Hôpitaux*, Aug. 3, 1909.
10. *Deutsche Med. Zeit.*, 1909.
11. *Jour. A. M. A.*, Aug. 14, 1909.
12. *Arch. Ped.*, May, 1909.
13. *Jour. A. M. A.*, Oct. 30, 1909.
14. *Jour. A. M. A.*, April 22, 1907.
15. *Med. Record*, N. Y., Nov. 6, 1909.
16. *Jour. A. M. A.*, Sept. 25, 1909.
17. *Jour. A. M. A.*, Nov. 13, 1909.
18. *N. Y. Med. Jour.*, July 3, 1909.
19. *Med. Record*, N. Y., Sept. 25, 1909.
20. WASH. MED. ANNALS, March, 1909.
21. Public Health Reports, Sept. 10, 1909.
22. *Bul. de L'Acad. de Med.*, —— 10, 1908.
23. *Brit. Med. Jour.*, Jan. 16, 1909.
24. *Jour. A. M. A.*, July, 19, 1909.
25. *Jour. A. M. A.*, Sept. 25, 1909.
26. *Interstate Med. Jour.*, July, 1909.

Dr. Barton said that the paper had presented such a variety of topics it seemed impossible to discuss more than a few of the problems indicated. As Dr. Barnes had mentioned a paper read by Dr. Barton himself before this Society some time ago, he took occasion to disclaim any attachment to therapeutic nihilism ; he realized that he had given some ground for suspicion that he subscribed to that creed by his attack upon some of the more common therapeutic fallacies. He believes, to the contrary, that therapeutic advance will be as rapid and as brilliant in the field of pharmacology as in any other department of this science. For a long time pharmacology seemed confronted with an impenetrable barrier, and we are still surrounded by a tangled jungle of empiricism; but light begins to break through, and progress has been as far and brilliant in certain directions, as in serum and vaccine therapy. But aside from these specific agents, we are able to treat many diseases well by the use of drugs, and we surely bring many diseases to a successful issue with the aid of drugs, without which the issue might at least have been doubtful. The change of heart in this matter of such a master physician as Osler is a significant fact. He expressed the opinion that much may be hoped for in the future in the medicinal treatment of many of the diseases now baffling us. Just as John Hunter knew nothing of the actual cause of syphilis and yet successfully cured it by the use of mercury and potassium iodid, so we may find some drug which may cure even so serious a disease as cancer.

A few pharmacologic facts seemed to need emphasis. An important observation has been made, namely, that hexamethylentetramin is excreted in the bile and may be found in the cerebro-spinal fluid. Thus it is a valuable agent in the treatment of inflammatory diseases of the gallbladder and for the prophylactic treatment of compound head injuries.

Progress has been made toward the goal of hypodermic purgation, the promising agent being a halogen derivative of phenolphthalein, first experimented with by Abel of Johns Hopkins. Physostigmin and apocodein may be called purgative to some slight degree. The first has a powerful stimulant effect upon the intestinal muscles by way of the vagus; but it has the same effect upon the skeletal muscles when given in sufficient dosage, and thus may have deleterious general effects before the purgative action is secured. The objection to apocodein is that it is ineffective in 50 per cent. of the cases. Phenolphthalein, however, when treated with chlorine, may be made to combine with this element, and the resulting compound, phenoltetrachlorphthalein, when dissolved in oil may be administered hypodermically with purgative effects. It is said to be excreted in the bile, exerts its cathartic action upon the small intestine, is absorbed again by the large intestine, reexcreted in the bile, and the circle thus begun again. It may keep up its purgative action for from six to fifteen days. He had experimented with this drug upon dogs, with partial success; he had found, however, that the sample of the drug with which he was working was impure, and he is now waiting to secure a supply of the pure drug.

Dr. Lochboehler said that we are using salicylates for the treatment of acute rheumatism just as they were used thirty years ago, except that very large doses are now given, as much as 300 to 400 grains a day. But we know that such doses cannot long be continued; there is no effective vehicle. Recently, though, he had found that the drug could be pushed by administering it in freshly prepared infusion of fennel seed; a boy under his care can thus take without discomfort 30 grains every four hours.

Dr. Williams desired to call attention to one phase of therapeutics as related to the control of tertiary syphilis, especially in affections of the nervous system, as, for example, to stay the course of tabes and even paresis, namely, the superiority of mercury over the iodids. Dana and he had both reported cases arrested in this way. The problem here is to give enough mercury without disturbing nutrition, and he had used and advocated intravenous and intramuscular injections; but efforts are still needed and are being put forth to find a method free from irritating local effects and which will obviate too rapid absorption. Various insoluble salts have been tried, but the irritation produced by their injection has in some cases been too great. He

had found that less pain is produced by plain gray oil than when adjuvated, but even this cannot be borne by all. The problem is still open to pharmacists.

Dr. Kober said that in connection with the excellent review attention should be called to the demonstration by Kebler, of the Bureau of Chemistry, of the presence of thyroid extract in various patent and proprietary obesity cures; these cures have been found to be productive of much mischief by reason of the thyroid extract. Dr. Kober hoped, also, that in the consideration of the hookworm problem due credit will be given Bailey K. Ashford for his pioneer work in Porto Rico; Ashford's work in this island should be an enduring monument to him, and reflects honor both on the Medical Corps of the Army and on Washington, his native city.

Dr. Bishop said that the use of salts, bases and acids for therapeutic purposes rests upon the fact that they are all electrolytes and act by virtue of their ionic activity. This action is inhibited by oils, and therefore he doubted if Dr. Lochboehler was getting the full benefit of the sodium salicylate he was giving his patient, because it was given with an infusion containing fennel oil.

Dr. Barnes thanked the members for their remarks. He did not wish to be understood as endorsing or advocating all the therapeutic innovations spoken of in his paper; he merely wished to pass in review the therapeutic problems, theories and discoveries now occupying the attention of investigators in this field. He was glad that Dr. Kober had called attention to Ashford's monumental work in the campaign against uncinariasis in the island of Porto Rico. The most interesting items in the review, as Dr. Barnes thought, were the treatment of diabetes on the theory that it is an infectious disease, and the treatment of shock.

ULCER OF THE DUODENUM; CASE AND SPECIMEN.*

By EDWARD A. BALLOCH, A. M., M. D.,

Washington, D. C.

The patient from whom this specimen was obtained was a colored man 30 years of age, who entered Freedmen's Hospital October 7, 1909. The family history was relatively unimportant. He stated that he had always had a delicate digestive apparatus, many articles of food, such as fats, for instance, being digested with difficulty. For the past year he has had increasing diffi-

* Reported to the Medical Society, February 9, 1910.

culty in digestion, and has had the feeling of being empty and hungry about four hours after a meal. Since August, 1909, all articles of food have given rise to pain and cramp-like feelings. For the past two weeks all solid food has been vomited at intervals of from fifteen to thirty minutes after taking. Has been able to retain water and some liquid food, but at times even liquids have been vomited. Occasionally there has been blood in the vomitus. Has had acid eructations, much belching of gas and constant pain between the navel and liver. Bowels have been constipated, the constipation being much worse during the last month.

Upon examination he was found to be very weak and much emaciated. Lips and mucous surfaces pale. Tongue pale and flabby. Pulse 130, weak and compressible. Abdomen sunken. Rigidity of upper right rectus muscle. At a point 7 cm. above and to the right of the navel was an area where pressure caused acute pain. The pain area was about the size of a half dollar. Numerous tests were applied, with the result of always locating the pain at this point. Examination of stomach contents showed free HCl 16.6, total acidity 23. No remnants of breakfast and only a small amount of second test meal were found. Motor activity normal and pylorus probably not obstructed.

Based on a history of the case, the feeling of hunger four hours after a meal (the sign so strongly emphasized by the Mayos as almost pathognomonic of duodenal ulcer), the limitation and location of the point of maximum tenderness and the absence of any evidence of pyloric obstruction, a diagnosis of ulcer of the duodenum was made.

As the patient's condition was so bad, it was thought wise to try to build him up before operating. Accordingly he was given koumiss and albumin water by the mouth and salt solution and nutrient enemas by the rectum. He retained all nourishment well and was doing nicely until the night of October 9, when he began to have air hunger and a rapidly-increasing pulse, and, in spite of active stimulation, he failed rapidly, and died at five o'clock on the morning of the 10th.

Autopsy by Dr. Van Swearingen revealed an ulcer on the posterior part of the duodenum, just beyond the pyloric ring, 5 cm. long and 2 cm. wide. The base of the ulcer was adherent to the pancreas and to the surrounding tissues. In the floor of

the ulcer was the open mouth of a small artery. Both small and large bowels were full of blood. All other organs and structures were normal.

Dr. Chappell had reported a year ago an interesting case of hemorrhage from the bowels, in which the differential diagnosis between ulcer of the duodenum and gallstone could not definitely be made. Since then he had had another case presenting similar difficulties. He asked Dr. Balloch if he had been able to recognize the existence of hemorrhage in this case early, and if so, whether it might not have been justifiable to operate.

Dr. Balloch said that the patient had been admitted on the 7th of the month and died on the 9th. His condition at the time of admission was so reduced by reason of starvation that an operation was not justifiable; there was no evidence of hemorrhage at the time of admission, though the stools were not examined for occult blood. The later hemorrhage was active and quickly fatal. If operation had been admissible, he was at a loss to know what kind of an operation would have been applicable.

CASE OF SARCOMA OF KIDNEY IN A CHILD SIXTEEN MONTHS OLD.*

By J. R. WELLINGTON, A. M., M. D.,

Washington, D. C.

The infant was a patient of Dr. Reeves; a female white child 16 months old. Family history negative. No history of cancer or tuberculosis in parents. Another baby, 3 weeks old, is apparently normal. The patient had always been well; had been fed chiefly on condensed milk. Last June, when 10 months old, the mother noticed for the first time a tumor on the right side of the abdomen about the size of an egg, which steadily increased in size. For the last two weeks the child had been restless at night, complaining of pain, apparently in the abdomen, and she limped slightly in walking; otherwise the growth had not interfered in any way with the development. Urine always normal. Dr. Wellington found the tumor filling the whole right side of the abdomen and could be seen from across the room; rather spherical in shape and did not fluctuate; extended from the right

* Reported, with specimen, to the Medical Society, January 26, 1910.

costal margin to the pelvis and to beyond the median line. A diagnosis of sarcoma of the kidney was made. Dec. 1, 1909, she was operated on at Providence Hospital; a long incision was made through the right rectus muscle, another incision in the peritoneum covering the tumor, and it was very easily shelled out. The ureter was ligated as low down as possible and the vessels tied *en masse*, no attempt being made to separate them. A small cigarette drain was left in the resulting cavity. The child lost practically no blood, left the table in good condition and at present is apparently well.

On incising the tumor it presented the appearance of a polycystic kidney, but the pathologist at the hospital, Dr. R. A. Hamilton, reports it to be sarcoma.

CASE OF ADENO-CARCINOMA OF TRANSVERSE COLON; OBSTRUCTION; RESECTION OF CECUM AND COLON; ENTERO-ANASTOMOSIS.*

By EDWARD A. BALLOCH, A. M., M. D.,

Washington, D. C.

The patient, Cordelia L., colored, entered Freedmen's Hospital January 14, 1909, with acute obstruction of the bowels. She had been vomiting persistently since January 12. The abdomen was greatly distended, and the history of obstruction was so clear that she was at once sent to the operating room and the abdomen immediately opened.

The cause of the obstruction was found to be a tumor in the transverse colon about 15 cm. from the ileo-cecal valve. Upon palpating the meso-cecum many hard glands could be felt. These hard glands could be traced in the mesentery as far as the meso-cecum.

The growth was thought to be malignant, with extensive involvement of the glands of the mesentery. It was felt that any operation which should leave the glands would be followed by a prompt recurrence. Accordingly, the ileum was clamped and cut, and the cecum and the transverse colon, to a point well be-

* Reported, with specimen, to the Medical Society, February 9, 1910.

yond the growth, were removed, together with the mesentery. The ileum was joined to the remains of the colon by a side-to-side anastomosis.

Examination of the growth by the pathologist of the hospital, Dr. Van Swearingen, showed it to be a beginning adeno-carcinoma.

The numerous mesenteric glands were found to be hyperplastic, and in many instances, notably those of the cecum, they were calcareous.

The specimen shows clearly an adenoma, just passing into the malignant stage.

In getting a more careful history of the case, after operation, the patient stated that she had been operated upon some years before by Dr. I. S. Stone and that he had put a Murphy button in her bowel. Upon inquiry Dr. Stone tells me that on September 29, 1899, he operated on this patient for pus tubes, taking out the uterus, ovaries and tubes. At that time there was a stricture in the sigmoid, due to a growth, to remedy which he resected 7 cm. of the sigmoid, joining the cut ends of the intestine by the Murphy button. He thought the growth was malignant, although no pathologic examination was made.

In conclusion I have to say that the patient made a prompt and uneventful recovery, and is now ready to leave the hospital.

Dr. I. S. Stone's reference to his private notes proved Dr. Balloch correct in the statement in the history as to a prior operation upon this patient by Dr. Stone; the diagnosis of the former condition was also correct, as his recollection of the case was quite clear. The patient had been operated on by him for retroversion and a former salpingitis; the growth in the colon was found unexpectedly, as there had been no symptoms of such a condition. The part of the colon affected was entirely removed. Had remnants of the disease persisted in the body of the patient all these years, or had Dr. Balloch operated for the relief of an independent growth of the same kind? Adenocarcinomas are often removed and recurrence or extension takes place at incredible periods afterwards. Dr. Stone cited a case of this kind.

Dr. Balloch said that the case emphasized the importance of having all neoplasms examined microscopically. If this had been done when Dr. Stone operated eleven years ago the question whether the present condition was *de novo* or a recurrence could at once be answered. It appeared to him that the growth removed by Dr. Stone must have been simple adenoma.

A CONVENIENT INSTRUMENT FOR READY CLINICAL INVESTIGATION OF THE SENSIBILITY TO COOLNESS AND WARMTH.*

By TOM A. WILLIAMS, M. B., C. M. (Edin.),

Washington, D. C.

When the spinal column is injured it becomes of great importance to the surgeon to know whether a consequent paralysis or loss of sensibility arises from damage to the cord itself or implication of the roots or of a plexus in the vicinity. Since the researches of Head and Sherren[1] and Head and Thompson[2] the means for making this distinction are clinically available. It will be recalled that stimuli, as they pass from periphery to central end organ, are grouped in quite a different way in the peripheral nerves to the manner in which they are collected in the spinal cord.

Thus, it has long been known that in the latter all the impulses of painful sensations run together in the lateral Gowers' tract, and that a lesion which interferes with any kind of pain always interferes with all kinds of pain. As is well known, the sensibility to cold and heat is conducted along the same tract as that of pain, although not in the same fibers; for one may be lost without the other, and either or both may be lost while the sensibility to pain is intact, and *vice versa*, although any of these combinations is rare on account of the close proximity and interlacement of the conducting paths.

Again, the knowledge of the attitude of our limbs is derived from impulses which mount the cord in the homolateral dorsal column, and they are there accompanied by fibers which make possible our appreciation of the locality of touch and of the distinguishing of the simultaneous touch of two points at a distance from one another which varies on different parts of the body.

On the hand, this latter test is the most convenient for determining whether a lesion is in the cord or in the periphery; for, in the latter case the loss of spacing sense is always accompanied by a proportionate loss of the superficial sensibility for distinguishing light touches and appreciating coolness and warmth, that is, temperatures between about 20 C. and 40 C. In a lesion

* Read before the Medical Society, February 9, 1910.

of the cord, however, there may be a loss of spacing sense without the least incapacity to appreciate either heat or cold, and without loss of feeling to the lightest touches with cotton wool; but there is then always a concomitant loss of the sense of attitudes.

In the lower limbs the compass test is not of great applicability; for the circle of discrimination is very wide, and persons are not accustomed to this type of discrimination. The hairiness of the lower limbs, moreover, vitiates the testing of fine touch with cotton wool; for the order of sensibility excited by the stimulation of a hair is different from the "epicritic" (as Head has called it) which is resident in smooth skin. Hence, to distinguish between peripheral lesions and those of the cord, clinical practicability requires the use of a different quantitative test; and it is for convenience in making this that I have devised the instrument now presented.

For estimating degrees of sensibility to temperature Head had used silver test-tubes containing water at a temperature ascertained by a thermometer placed in the tube. Now, silver tubes are expensive and the insertion of a thermometer is inconvenient. Besides, in a small tube, the loss of temperature is rapid. So in my instrument copper is used, for it is nearly as good a conductor and much less expensive. It is used in a block and not as a tube, again saving expense. The thermometer is firmly attached to the instrument, which greatly adds to its convenience; and, lastly, rapid loss of heat is compensated for very simply; for the desired temperature is reached by plunging the base of the instrument into water in a large vessel the total body of which retains its temperature much longer than does an instrument of any practicable size, unless electrically heated, as in the instrument recently devised by Mills[3], the expense of which precludes its general use.

The apparatus consists of a cube of cast copper, 3×3×3 centimeters, tunnelled out in the center to within two millimeters of the opposite surface. Into the tunnel is inserted the bulb of a thermometer of the kind used in storage warehouses. It registers from 10 degrees to 140 degrees F. This thermometer has been selected only for its availability; for the range of temperature need not be so great, but it is a safeguard against breakage. The whole is mounted upon a wooden holder along a groove in

which the thermometer is embedded for protection. The scale is easy to read, as it lies in the furrow. For convenience of manufacture the copper block is made in two equal parts, furrowed in such a way that the approximation of the grooves forms a circular tunnel for the thermometer. The two halves are clamped together with four copper screws; and the whole is in turn screwed to a strip of brass ⅛ inch thick and 3 c. wide. The brass fits along a beveled-cut surface of the block, which extends to within two millimeters of the foot. The brass strip is screwed also to the wooden handle which carries the thermometer scale, thus making the whole solid and giving a uniform surface of copper to place against the skin of the patient being examined.

To use the instrument, it is plunged into a large jug of water at a temperature approximating to that desired, say 25 C., when testing for appreciation of coolness, or 40 C., when testing the appreciation of warmth. It is very easy, by adding cold water or hot water, to obtain any temperature desired in the large vessel; and this will remain practically constant long enough to enable a series of observations to be taken sufficiently complete for current clinical use. Of course, it is easier to obtain accurate results when two instruments are used, one cool, the other warm; for it is then more easy to control the tendency of patients to continue to call all temperature stimuli by the name they use for the first stimulus felt. Any indifferent metallic substance may, however, be employed satisfactorily to eliminate this fallacy. While it has a certain convenience in the often delicate diagnosis between peripheral and central lesions, especially of the lower part of the spine, of course, the instrument does not pretend to be a substitute for clinical acumen. No apparatus can do that; but it is a convenience; and, furthermore, affords a ready means for ascertaining data for purposes of comparison with the cases of other observers. It is thus useful both in the practice of medical, and especially surgical, art, and in the compilation of the records which further the advancement of science.

References.

1. Head and Sherren. *Brain*, 1905.
2. Head and Thompson. *Brain*, 1907.
3. Mills, C. K. Phil. Neur. Soc., Dec. 18, 1909.

Dr. Phillips understood that the block of copper is put into water of the desired temperature before being applied to the skin. Is the instrument wiped dry before it is used? If not, there will be an element of error from the evaporation of the water. If great accuracy, however, be necessary, the instrument would hardly be useful.

Dr. Williams said that the instrument had been found to be accurate within two degrees; the margin of error in normal cases being twenty degrees, the accuracy of the instrument is quite sufficient. Of course, it is wiped dry before it is placed in contact with the skin.

MEASLES AND MICE. DOES THE MICROBE OF MEASLES COME FROM THE MOUSE?*

By A. F. A. KING, A. M., M. D., LL. D.,

Washington, D. C.

It is with much regret that the writer is obliged to acknowledge that he is unable to present an experimental demonstration and clinical proof that the microbe of measles *does* come from the mouse, and of the consequent *sequitur* that to exterminate measles we must get rid of mice.

It is hoped, however, that the evidence to be presented in support of this proposition may be sufficient to elicit from others, either individuals or institutions, the clinical tests by which the truth, or otherwise, of the idea may be demonstrated.

The origin of measles *de novo* is the matter to be considered. The propagation of the disease from one individual patient to another by contagion is a different thing, with which, probably, the mouse has nothing to do. It is the initial cases, at the very beginning of an epidemic, that we are considering. Of course, during the prevalence of mice in a special locality new additional *de novo* cases may be continually developed from mouse infection, and thus add to the cases produced by contagion.

Numerous instances are on record in which measles seems to have originated from contact with *straw*. During our Civil War (1861–1865) it was generally understood that the soldiers in both armies got measles by sleeping upon straw. In the "Medical History of the War of the Rebellion" (Philadelphia, 1865, p.

* Read before the Medical Society, February 2, 1910.

127) one report presents a record of 1,900 deaths out of 38,000 cases of measles, of which sleeping upon straw was the recognized cause. In some instances military orders were issued prohibiting the soldiers from using straw for bedding.

In 1862 Dr. J. H. Salisbury, of Newark, Ohio (*Amer. Jour. Med. Sci.*, Philadelphia, N. S., Vol. XLIV, July, pp. 17–28, and Oct., pp. 387–394), obtained from wheat straw spores of fungi, which, when introduced into the body, produced a disease which appeared to be identical with measles and which conferred future immunity upon those who had been inoculated with these spores.

Salisbury's experiments are constantly mentioned in the literature, and just as constantly is it stated that subsequent investigators failed to confirm his results. Thus, Dr. Pepper inoculated twenty-two non-immunes with spores of straw fungi, without any result (*Brit. Med. Jour.*, Jan. 21, 1882, p. 77), and Dr. J. J. Woodward in his work on "Camp Diseases" (p. 276) opposes the views of Salisbury, remarking that "measles breaks out in barrack buildings where the men lay on the floor on their blankets without straw. It has broken out in camps where no straw was furnished to the men, and when they lay on cedar twigs or on India-rubber blankets." He adds: "Salisbury's straw fungus is a form of penicilium of the most frequent occurrence, and is widely distributed throughout the country." "It is formed abundantly in every stable where straw is used for bedding; in every wheatsheaf or stack of grain which stands exposed to the weather" (p. 278).

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Woodward produced straw fungi by shutting up damp straw in a box, and with them he inoculated himself, Acting Surgeon Curtis, Hospital Steward Whitney and others, without any effect. Thus the straw theory of Salisbury was dismissed.

But if we now admit the *mouse* as an etiological factor in producing measles, the conflicting results of Salisbury and his opponents may possibly be reconciled, for the one may have been operating with straw containing mouse infection and the others with straw in which the mouse factor was absent. Woodward's "barrack floors," "cedar twigs" and "rubber blankets" may exclude straw but they do not exclude mice.

In his paper, before referred to (*Am. Jour. Med. Sci.*, July, 1862, p. 20), Salisbury reports the case of the Hon. J. Dille, who got measles from pitching wheat straw from an old stack and un-

loading it in his barn. There was lots of dust which Mr. Dille inhaled. Also the case of a Mr. S., who was on a wheat rick two days, while the wheat was being taken into the barn (*ibid.*, p. 21). He developed measles, and in from four to seven days all of his brothers and sisters got the disease. There were no other cases in the vicinity. While no mention is made of mice in these two wheat-rick cases, it is far more likely that the ricks *did* contain mice than that they did not.

In recently investigating a supposed *de novo* case of measles in this city it was found that the patient got measles after playing in the loft of the White House stables (a mile or more away from her home), where she had gone to play with the children (who got the disease at the same time) of the stableman. The loft contained straw and hay, in which there was "any quantity of mice," so the stableman stated.

The writer of this paper can well remember that his brother and himself, when respectively 10 and 11 years of age, were attacked with measles after spending several hours helping to kill mice on a wheat rick that was being taken into the barn, and which was swarming with these rodents. There were no other measles cases, that I can recall, among our neighbors and schoolmates.

Some years ago a box of china packed in straw was received in my own house. While unpacking it I could not get rid of the idea that there was measles in the straw. It was probably a subconscious olfactory impression, but so pronounced that, fearing my own children (who were then very young) might get the disease, I had the box and packing burned up without delay. My children escaped, but some days later we learned that the relative in whose house the china had been packed was in bed with measles. She was a grown woman; it was her second attack.

Dr. Henry Kennedy reports a case of measles (*Dublin Quarterly Jour. of Med. Sci.*, 1863, Vol. XXXV, pp. 60–66) produced by one boy playfully dashing a handful of flaxseed meal into the face of another one. The meal went into his eyes, nose, mouth and respiratory organs. Dr. Kennedy—evidently a convert to Salisbury's views—concluded that the meal was probably mouldy with the same fungi found in Salisbury's straw. But if Salisbury's view is untenable it may be said that a mouse in the meal

tub would explain the etiology of the case in accord with the view we are now considering.

In making cultures from the intestinal excreta of mice all the forms of straw fungi depicted by Salisbury in the illustrations of his paper in the *Amer. Jour. of Med. Sci.*, before mentioned, can be produced. These fungi spores evidently attach themselves to the mouse excreta. But I have always found in these cultures, bacilli and a multitude of oscillating spores. No reference is made to either of these findings in Dr. Salisbury's paper. And, on further examination, I find that these bacilli resemble in many respects those found by Canon and Peilicke in the blood, expectoration, nasal and conjunctival mucus of fourteen consecutive cases of measles that they examined (*Berlin Klin. Woch.*, April 18, 1892. Review in *Brit. Med. Journal*, April 23, 1892, Vol. I, p. 868). They describe the bacilli as of "very variable size; sometimes half as long as a red corpuscle is wide; sometimes quite small; between these two extremes several gradations in size. Occasionally they are of extraordinary length, equal to the diameter of a red corpuscle. They are frequently slightly bent. They displayed only *slight* power of independent movement." The bacilli I have found in the cultures of mouse excreta present in a most striking manner the "extraordinary length," bending, curving and slight power of independent motion described. The shorter bacilli are much more active than the longer ones. But I am not a bacteriologist, and whether their bacilli and mine are identical I cannot say. In one respect they do not agree, viz: Canon and Peilicke could not cultivate theirs on glycerine-agar, on which I cultivated mine. In confirmation of their experiments they examined seven other cases of measles which had convalesced, but in which some remains of the skin eruption were still visible. In these they failed to find the bacilli.

It may be noted that Barabaschi has recently (*Jour. Amer. Med. Assn.*, Jan. 8, 1910, p. 17) found in the intestinal excreta of mice caught in private houses the *pneumococcus*, which might probably explain the pneumonic complication in some cases of measles. In other cases he found also staphylococci, streptococci and the anthrax bacillus. Thus, it would seem that the intestinal excreta of mice contain a great variety of microbes, among them probably those which, when inhaled with the dust

from straw and other sources, produce measles. But this bacteriological investigation must be left to abler hands.

It may next be noted that measles is a cold-weather disease. Our epidemics usually begin in November or December and continue until April or May. They decline and fade away during the summer and autumn. We also find that mice remain in the fields during summer, but swarm into agricultural buildings and human habitations for food, shelter and protection during the winter months.

Is there any coincidence between an increased prevalence of measles and mouse-plagues? From what is to follow it will be seen there is at least a *partial* agreement between these two; and, in cases where the agreement is wanting, it may possibly be explained by the circumstance that *other things* were *not* equal in the places where and at the periods when the mice and measles prevailed.

Plagues of mice have occurred in all ages and in many different countries. The usual history of these plagues has been—in modern times, at least—that the mice begin to increase during some particular year and go on increasing during two or three years more, when, from overcrowding or some other cause, an epidemic contagious disease occurs among the mice themselves by which they are destroyed, thus leaving fewer mice just *after* a plague than there were before the plague began. The origin of these plagues has usually been ascribed to a succession of mild winters, with a *superabundant harvest of cereal grains* on which the mice feed.

The three most notable mouse-plagues of recent times, during which the mice were so numerous and destructive that Government aid was called upon for their suppression, were those of Scotland, Thessaly and Russia. They all occurred about the same time, 1892–1895. Probably the same meteorological conditions conducing to plentiful harvests existed at the same time in the three countries.

To ascertain the relative prevalence of measles during these plagues I have been obliged to rely chiefly upon the number of *deaths* from measles during the mouse-plague years; but few hospital reports giving the *cases* of measles being available.

Thus, the number of *deaths* from measles throughout Scotland during the years 1886 to 1894, inclusive, as shown by the de-

tailed Annual Reports of the Registrar General, Nos. XXXII to XLI, p. 40, is shown in the following table :

Year.	Deaths from measles.	Year.	Deaths from measles.
1886	681	1891	1,775
1887	1,598	1892	2,280
1888	1,406	1893	3,639
1889	1,948	1894	791
1890	2,509		

Thus in 1893, when the plague had reached its acmé, the number of deaths was 3,639—really 1,130 more than in any of the previous years tabled, not excepting 1890, when the deaths were 2,509.

While this plague in Scotland is generally known as "the mouse-plague of 1892–3," it is quite evident from the "Report of the Departmental Committee," London, 1893—a Parliamentary "Blue Book"—that the plague existed to some extent as early as 1887, but no mention is made of any excess of mice during 1886.* Among the eighty witnesses examined by the "Committee" one (Craigie, p. 1) testified that the excess of mice (voles†) was observed as far back as the summer of 1889, and thus it went on for three years instead of one and a half years. Another witness (Patterson, p. 33) testified : "We never had a real plague of mice till the back end of 1890 and the spring of 1891." Glendenning testified (p. 33) that there was a comparatively mild plague in 1888. Another witness said (p. 44) : "The present plague really started during the fine season of 1887 ; since then there has been an annual increase, culminating in the present state." Still another testified : "They (the mice) have been on the farm since we took it in 1887, but never in such numbers to do very much harm till the autumn and winter of 1890–1." Thus, then, before the culminating years of 1892–3 the number of mice was sufficient to account for the measles mortality during the years 1887 to 1891, inclusive, as shown in the table.

The Russian mouse plague, as reported by our consul at Odessa, Dr. Thomas E. Heenan (U. S. Consular Reports, Vol. L, pp. 539, 540; also, *N. Y. Sanitarian*, 1896, Vol. XXXVII, pp.

* The population of Scotland in 1880 was 3,705,995 ; in 1890, 4,003,132 ; in 1895, 4,155,654.

† "Voles" seems to be the Scotch name for mice, though the vole differs somewhat from our common mouse.

154–160), began, he tells us, in the autumn of 1893, and, during 1894 and a part of 1895, extended from the provinces on the shores of the Black Sea, where it began, away up into Siberia. Here again, as in Scotland, there is considerable discrepancy as to the exact date when the plague began. Thus, in Dr. Heenan's report, from which I quote (p. 540), he says, "the mice appeared at the end of 1892;" and again, "the mice, which had multiplied during the *two preceding* years *continued* to increase in large numbers during 1893 and 1894." "In the spring of 1895 they disappeared" (p. 540).

In the St. Olga Children's Hospital (Moscow) the number of measles *cases* admitted during the plague period was as follows :*

Year.	Cases of measles.	Year.	Cases of measles.
1892	Not in Library.	1896	770
1893	251	1897	958
1894	1,116	1898	725
1895	260		

Thus, when the plague was at its height (1894) there were 1,116 cases, being 438 more than the average during the next four years. When the mice had been destroyed by an epidemic disease among themselves in 1895, the number of cases, 260, was *below* the usual number—just what occurred in Scotland.

The *deaths* from measles throughout the Russian Empire during and adjacent to the plague epoch afford no support to the mouse theory of measles, but rather conflict with it. Nevertheless I give the following table, showing the deaths from measles from 1891 to 1907 :†

Year.	Deaths from measles.	Year.	Deaths from measles.
1891	83,900	1900	69,517
1892	115,112	1901	108,988
1893	70,561	1902	138,732
1894	87,951	1903	59,656
1895	106,451	1904	101,567
1896	95,563	1905	87,831
1897	Missing	1906	50,323
1898	135,000	1907	71,323
1899	Missing		

* Figures prepared by Dr. B. Israeli, Russian attaché of the Library of the Surgeon General's Office, U. S. A.

† Kindly prepared by Mr. A. V. Babine, assistant in charge of the Slavic section in the Library of Congress. Compiled from "Entsiklopedicheskii slovar Brockhausa i Efrona" and "Viestnik obshchestvennoi gigieny."

Admitting that this death record in Russia conflicts with the idea of measles being more prevalent during the plague years, how is this conflict to be explained? Are there any sources of error that should be eliminated? The only account we have of the Russian mouse plague is the very brief one by Dr. Heenan, before referred to. But it must be remembered that the Russian Empire covers an area of 8,650,000 square miles. Its population in 1905 was 146,837,138. Dr. Heenan (at Odessa) does not seem to have made any critical investigation as to the prevalence of mice during the several years; and the dates given in his own brief statement are conflicting. And since it required a Parliamentary Committee to examine about 80 witnesses and obtain replies to 2,215 questions to ascertain the facts of the mouse plague in so small a territory as Scotland, may we not, in all fairness, conclude that the Russian plague requires a more exact and comprehensive examination before the relation between mice and measles can be positively determined?

If, as Dr. Heenan states, the mice first appeared in the southern provinces and moved like an army to Siberia, the mortality from measles may have been modified by other factors besides the prevalence of mice. Thus the army of rodents may, during one year, have crossed regions where the population was dense, and at another year where it was meager. The people in one locality may have been well housed, clothed and fed, and in another not so. In one region and season they may have had good treatment and good weather, and in others the opposite conditions. Thus the prevalence of mice and measles may not agree because other things were not equal. The fact is, plagues of mice have repeatedly appeared at intervals of a few years, in Russia as well as in other countries, and no record of them can be found. Thus in 1898, when the mortality was 135,000, and in 1902, when it was 138,732, for aught we know to the contrary, there may have been other mouse plagues.

The mouse plague in Thessaly* (See *Indian Med. Gazette* (Calcutta) Oct., 1892, Vol. XXVII, p. 305; also *Centralblatt fur Bakteriol. u. Parasiten* for July 5, 1892), whenever it may have begun, had so far progressed by the middle of March, 1892, that at this time "the plain of Thessaly was overrun by myriads of mice." The *good harvest* and mild winter of 1892 offered no ob-

* The population of Thessaly is 344,067; its area is 5,073 square miles.

stacle to their multiplication, so that in February, 1893, they appeared in greater numbers than had been seen for twenty-five years.

In 1907–8 a moderate plague of field mice occurred in Nevada, Utah and Northeast California (*Year Book of Dept. of Agriculture* for 1908, pp. 301–310; also, *Farmer's Bulletin*, *352*, *U. S. Dept. of Agriculture*, March 20, 1909). No data are at present available as to the prevalence of measles during these plagues in America and Greece.

Leaving now the coincident prevalence of measles and mice, there seems to have been at least one region where the inhabitants for a long term of years were *exempt* from measles, and probably from mice also. From the year 1781 until 1846—a period of sixty-five years—there was not a single case of measles among the (then) 7,782 inhabitants of the Färöe Islands. In 1846 an infected man left Denmark, sailing from Copenhagen on March 20th. Three days after his arrival at Thorshaven he sickened with measles, and from him more than 6,000 of the islanders got the disease (See *Watson's Pract. of Physic* (Condie) Amer. edition, 1858, p. 1173; also *Archives Générales de Mèdicine*, Vol. XXV, April, 1851, pp. 451–461).

With regard to the prevalence of mice in this colony I quote from the recent (1898) work of J. Russel-Jeaffreson, Fellow of the Roy. Geograph. Soc., on "The Färöe Isles," p. 74, as follows: "I learned that some of the islands—Sudero, Diamond, Kolter, Hestö and Fuglö—are *entirely exempt* from the *mice pest*. It is said that these islands were in olden times freed from these vermin by the curse of a powerful wizard, and that people whose houses are infested with mice procure some of the soil from these islands, which is believed to expel the mice from their dwellings." The absence of mice in this region at the time mentioned was probably due to the paucity of cereal grains and to the great number of cats kept by the inhabitants. Owing to frequent hurricanes it is impossible to cultivate the taller cereal grains—wheat and rye—and, while oats and barley are grown, they are usually cut when green to serve as fodder for cattle (Annandale, on "The Färöe Islands and Iceland," 1905, p. 50; also "New International Encycloped.," 1907, Vol. VII, p. 467; and "Encyclop. Britt.;" Vol. IX, p. 39, edit. of 1879). Thus, in these islands we find the very antipodean conditions of those existing

in Russia. In this country we found superabundant harvests of cereal grains, armies of mice and a great mortality from measles. In the Färöe Islands, no cereal grains, no mice, no measles, at least during the sixty-five years before mentioned.

It must be noted that Russel-Jeaffreson does not say *all* the islands are (1898) exempt from mice; and a later (1905) writer, Annandale, states that mice are common on the islands of Naalsoe and Stromoe. But are these islands still exempt from measles? It would seem not; for instead of passing sixty-five years without a single case, we find that epidemics occurred in 1862, 1875, 1895, and probably at other times ("Hirsch's Geographical and Historical Pathology," p. 161; *Trans. of the Epidemiol. Soc.*, 1892–3, N. S., Vol. XII, pp. 42, 43; also, *Ugesk. f. Lager, Kobenh*, 1896, 5 R., III, 1129–1138).

During the period from 1781 to 1846 the Färöe Islands were commercially cut off from the rest of the world. Since then the population has increased to (in 1890) 12,954;* commercial relations have changed; steamboat communications have been established; and, most probably, importations of cereals, mice and measles are more frequent than formerly. "*Tempora mutantur*," etc. Thus it seems quite *probable* that the islands, from 1781 to 1846, were exempt from measles *because* they were exempt from mice also.

Now, while the evidence thus presented in support of the etiological relation between measles and mice is, for the most part, only probable or presumptive, how shall positive evidence be obtained by experiment? Hitherto the experimental production of measles artificially has been done by inoculation—by inoculating non-immunes with blood, mucus, tears, etc., taken from measles patients. But this is not the method by which the disease is *naturally* acquired. Measles is not produced by inoculating wounds, neither by the bites of insects nor by traumatism of any kind. The initial symptoms: cough, sneezing, coryza, sore throat, lachrymation, etc., all indicate infection by a spore-laden (probably, in *de novo* cases, by a *dust*-laden) atmosphere. Thus, if we admit the mouse excreta to be the original source of measles it is easy to conceive that these excreta, when dried by the warmth of our houses, crushed by passing feet upon the floor

* Universal Cyclop. and Atlas, Vol. IV, "Färöe Islands." The seventeen inhabited islands have an area of 490 square miles.

and dispersed by house-maids' brooms into the air, can in this way come in contact with the respiratory and other mucous surfaces.

To imitate this series of events I may suggest that a sufficient quantity of intestinal concretions from the mouse should be reduced to fine powder, and then diffused through the air, to be inspired by non-immune children of a suitable age (not younger than 8 years). In a supposed *de novo* case recently investigated I found the child got measles, without having been exposed to contagion, by inhaling dust made by the mother sweeping out a very dusty cellar in a house she had just begun to occupy. At least this is the only available explanation of the case. It seems to be similar in origin to the cases produced by inhaling dust from mouse-infected wheat ricks and stable straw mentioned earlier in this paper.

It may be mentioned that in all of these cases where the disease seems to have been produced by the inhalation of infected dust, the symptoms begin much sooner than after exposure to contagion from other cases. In these last the period of incubation is usually from seven to eight or ten days, even more; while in the *de novo* dust cases the symptoms begin as early as two or three days after inhaling the infecting agent. Possibly in these last cases the *quantity* of infection taken in is greater than in the others.

Finally, while measles and mice have been thus considered in a somewhat crude way, it must be noted that there are different types of measles and very many (between one and two hundred) species of mice; just as we have different types of malarial fever and many varieties of mosquitoes. So, again, the bacteriological findings in measles have varied very much with different investigators. Thus besides the long curved bacilli of Canon and Peilicke, before mentioned, Braidwood and Vacher found sparkling colorless bodies, some spherical, others staff-shaped, spindle-shaped and canoe-shaped (See *Trans. Pathol. Soc. of London*, Vol. XXIX, p. 422; also, *Brit. Med. Jour.*, Jan. 21, 1882, pp. 77, 78.) In malignant measles Keating and Formad found micrococci in the liquor sanguinis and in the white corpuscles; some of these last being destroyed, really ruptured by the rapid development of microbes within them (*Phila. Med. Times*, Aug. 12, 1882, pp. 765–9). Czajowski has cultivated another bacillus,

from the blood of measles patients, on glycerine-agar-agar ("Pathogenic Bacteria," by McFarland, 4th edit., 1904, pp. 578, 579); and Weber has found in the blood of measles cases a protozoon resembling that found in variola (Ewing, on "Clin. Path. of the Blood," 2d edit., p. 301).

With this great variety in the microscopical findings of measles we can scarcely suppose they all come from the same species of mouse. Nor has it yet, so far as we know, been demonstrated that any special microbe is in reality *the microbe of measles.*

Nevertheless, should experiment prove that the infecting agent (whatever it may be) comes from the mouse we may then hope, by exterminating *all* kinds of mice, to secure the same immunity from measles that was enjoyed, for sixty-five years at least, by the inhabitants of the Färöe Islands.

It is perhaps deserving of mention that in recently cultivating bacilli from dried mouse excreta collected in 1907 (three years ago) they seem to be quite as fertile as those of more recent collections. Should any one desire these older specimens for experiment I shall be glad to supply them.

Dr. Kober said that Dr. King's paper set forth a very interesting hypothesis, and the data advanced to establish it were ingeniously correlated and must have required great labor to gather. The complete demonstration of the propagation of malaria by the mosquito; the rôles played by the tsetse fly, the cattle tick and ground squirrel in the dissemination of infectious diseases among the lower animals—these are facts which add interest to Dr. King's hypothesis and support it while it awaits the adjudication of time.

Dr. S. S. Adams recalled the ridicule with which Dr. King's proposition of the causal relation between mosquitoes and malaria was received. Time has simply verified Dr. King's theory, and the proposition receives almost universal acceptance. Dr. Adams called attention to the exceedingly contagious nature of the measles virus and the uniformity of the period of incubation.

Dr. Williams was in Scotland at the time of the mouse plague referred to by Dr. King. The epidemic of measles was largely in the cities, while the mouse plague was in the country districts. The vole is an entirely different species from the domestic mouse. There had been severe epidemics of measles in the refugee camps during the Boer War; but mice were never seen in the camps.

Dr. D. S. Lamb said that it would be well in this connection to investigate the introduction of measles by Capt. Cook into the Fiji Islands. Experiments so far have shown the impossibility

of causing measles in lower animals by inoculation. This, however, would not necessarily prevent mice from spreading the infection. Perhaps the *mouse flea* may be responsible for the coincident prevalence of mice and measles.

Dr, Chappell said that the history of measles in the Färöe Islands shows at least that mice are not necessary to the spread of the disease.

Dr. King thanked the speakers for their remarks. What he was especially interested in was the origin of the *de novo* cases; where do the first cases in an epidemic originate? Here the mice may play their part; after an epidemic is started then man to man contagion is easy and probable. He had been much interested in Dr. Williams' remarks.

CASES OF GALLSTONES.*

By A. L. STAVELY, A. M., M. D.,

Washington, D. C.

Mrs. W., age 37. The case I wish to refer to now is of exceptional interest on account of a rather remarkable complex of symptoms which were at first attributed to gallstones, but which I believe were due to two distinct conditions—gallstones and chronic gastro-mesenteric ileus.

Before giving the history I should like, by way of introduction, to describe a case of chronic gastro-mesenteric ileus, which I was fortunate enough to recognize as such, and cure by a novel surgical procedure.

Mrs. F., white, married, age 36, a woman of spare physique. The family history has no bearing. She had measles as a child and whooping cough three years ago. Menstruation began at eighteen. She has had two children, both living and well. The last conception, seven years ago, resulted in a miscarriage. Infection followed and a pelvic abscess formed. Vaginal puncture was made at the Providence Hospital. For five days following the operation there was at frequent intervals vomiting of large quantities of dark-green fluid. Her life was despaired of. Something, she does not remember what, brought about a happy change, and she recovered; but her recovery inaugurated a complex of symptoms which had not existed prior to that time, and which continued up to the time of the final operation. These

* Reported, with specimens, to the Medical Society, February 9, 1910.

were: marked distension of the stomach, pain, generally severe, located in the stomach and extending to the lateral portions of the abdomen, nausea and vomiting. The vomiting was frequent, but not invariably present. These attacks always followed the taking of food. No matter how digestible the latter, symptoms were always present; but very small quantities of broth gave the least discomfort. Milk had a bad effect. She has been obstinately constipated. The distension occurred with remarkable rapidity, almost immediately after the taking of food, was limited to the stomach area and was always present, varying somewhat in the amount of tension. An attack would often last several hours and could only be relieved by drinking hot water and vomiting. Turpentine stupes modified the pain. The vomitus was always green and bitter. Occasionally she had vertical headaches and severe pains in the shoulders and arms, such as are found in gastric tetany. These pains she attributed to the condition of her stomach. During the seven years the symptoms persisted she had, as well as she could remember, about twenty attacks, during which the stomach became so distended that she lost consciousness. I saw her in the summer of 1907, with Dr. John Shaw, and, without recognizing the exact condition, advised an operation. She went to the Garfield Hospital, where a duodeno-jejunostomy was performed on December 16, 1907. At that time the stomach was much distended. There was a dome-shaped projection, which occupied the epigastric region and extended an inch or so below the navel. A central incision was made. The stomach was distended with gas and the duodenum, about three inches in diameter throughout its entire length, extended well up under the liver and described a large U-shaped curve. The distension extended to the mesenteric ligament. The jejunum, while containing some gas, was soft and compressible, and in no way resembled the duodenum. The pylorus would easily admit four fingers. Upon raising the transverse colon the bulging of the duodenum could be seen against the meso-colon. Below, the small intestines were contracted. The constricting cause was unmistakable, and I decided upon anastomosing the duodenum and jejunum in front of the mesenteric ligament. This was rendered more easy on account of the large size of the duodenum. An opening was made from below, through the meso-colon, a part of the duodenum drawn through and anastomosed to the jejunum about a foot from its origin. The edges of the omental opening were stitched. After the operation she vomited almost constantly until the following morning; after that there was a gradual improvement, and all irritation ceased about five o'clock the same afternoon. For the first thirty hours she was given salt solution by the rectum, and after that water by the mouth. On the third day she was allowed albumen water and broths, and these were continued for ten more days

with little variation, when the button passed. After that she ate eggs, toast, tender beef and other articles without discomfort. The results of the operation have been most satisfactory. At the present time, six months after the operation, she is entirely free from gastric distension and pain, can eat any kind of food without discomfort, and has gained about twenty pounds in weight. She can be considered cured.

Mrs. W., age 37, was seen, with Drs. Morgan and Clark, last month. She married at 19 and had four children. Has always had trouble with her stomach, and cannot remember the time when she did not suffer with indigestion and collections of gas in the stomach after eating. These attacks were not severe or prolonged. About fourteen years ago, shortly after the birth of her second child, she had a severe attack of what she called indigestion, and with this there was marked distension of the stomach. As she described it, there was a "pressure pain" as though she were bound in by a band, and the "stomach would swell up like a ball." She was never nauseated with these early attacks, but always had severe pain, which she could often relieve by taking hot soda water and eructating. A physician at that time told her she had "cramp colic." The trouble would usually follow eating, but she cannot remember any especial food which caused it, and it would sometimes come when she had not eaten anything. She has been gradually getting worse, but long periods, several months, would elapse between severe attacks.

In December, 1906, she had a severe attack, accompanied by an intense pain in the stomach, lasting for several hours. Since then attacks have been getting worse and more frequent. In April, 1908, the acute attacks averaged at least two a week, and, with the exception of one month, when she was partially relieved, continued until December, 1908, when she had an illness lasting three weeks. For fourteen days, almost continuously, she vomited a dark-green fluid, which she described as intensely acid. She had sharp, shooting, twisting pains, which seemed to devolop in the back and extend to both shoulders. She never had pains like these before.

After this she improved until March, 1909, when she had an acute attack lasting three or four hours. From that time until October she was free from severe symptoms. From October until January, 1910, she has had the attacks frequently, and during

the four or five weeks before the operation had constant, rather severe pains nearly all the time. When the attack was severe she would have a bad backache. Food distressed her and caused her stomach to swell.

On January 5, 1910, I operated and removed a gallstone. I noticed the unusual size of the stomach and duodenum. There was some dilatation of the pylorus. I remarked at the time that it strongly suggested the possibility of chronic gastro-mesenteric ileus. Nothing was done to relieve it, partly because her condition was bad and partly because I wanted to determine the effect of the removal of the stone. After recovery from the anesthesia she began vomiting small quantities of light, bile-stained fluid at frequent intervals. This continued into the second day, when the stomach was washed out by Dr. Clark. I had ordered elevation of the foot of the bed prior to that; but through some misunderstanding it was not attended to. Late that evening I called up the hospital and learned that she had vomited over a quart of dark-green, sour fluid. Impressed with the feeling that she had gastro-mesenteric ileus, I asked if the bed had been elevated as I had ordered, and was informed that it had not been. It was then done, and with the change of position the vomiting promptly ceased.

Since the operation she has had no attacks; her digestion has been perfect and she feels well.

There is no question about the association of the two conditions, gallstones and ileus. Whether the gallstones have any relation to the ileus, or *vice versa*, is very hard to determine. Gastro-mesenteric ileus, as we know, is due to the tense mesenteric ligament pressing against the duodenum, and obstructing the fecal current; and if the gallstone has nothing to do with it, we will probably see a return of the symptoms of ileus.

I have attached considerable importance to this case, because I believe many cases of chronic indigestion are due to a tense mesentery, and I believe it is a good plan, when operating on patients with attacks somewhat similar to those I have mentioned, to examine the duodenum and the mesenteric ligament. The acute symptoms can almost invariably be relieved by elevating the foot of the bed two or three feet or by laying the patient on her abdomen.

Mrs. D., age 61, gives the following history: The illness

which brought the patient to operation began last August, with attacks of indigestion and a feeling of discomfort in the region of the gallbladder, and a steady pain lasting for several hours and located about the angle of the right scapula. On Thursday, January 20th, when I saw her with Drs. Morgan, Clark and Davis, she was in the middle of another attack. The pain had been very severe, and there was a great deal of tenderness and rigidity over the region of the gallbladder. There had been some nausea and headache; no jaundice. The temperature ranged between 99 and 102. There was absence of leucocytosis. The gallbladder was palpable.

The operation took place a little over two weeks ago. The gallbladder was distended with a turbid, bile-stained mucus; and, wedged in the neck of the gallbladder and subjecting it to very severe tension, was a gallstone which, on account of its size and the large quantity of lime salts, is rather unique. The stone weighed a little over 1½ ounces shortly after removal. I was interested to find out how large these stones could become. The Mayos, in *Keen's Surgery*, refer to one reported by Mayo Robson weighing 3½ ounces—probably the largest on record. Dr. Merrill will have something very interesting to say about this specimen:

"The following description of the largest gallstone that has so far as we know been described, is taken from *Hutchinson's Archives of Surgery* for July, 1891; the original source being Dr. Speir's translation of Dr. Aug. G. Richter's work entitled "Medical and Surgical Observations," published in 1793. Richter writes: 'There was a stone in the ductus choledochus which, on account of its uncommon size, I have caused to be engraved in the annexed figure. It weighed 3 ounces and five drachms. All around the stone was fluid bile, so that this fluid had evidently passed by the stone into the duodenum. It fell into three pieces on being taken out. The external surface resembled a very firm extract of licorice. On some places there were evident marks of other stones adhering to it. The thick end of the stone was in the duodenum; the most pointed was turned toward the neck of the gallbladder.' "

Mrs. ———, operated on about two years ago, was seen with Dr. Luckett. She had symptoms indicating a severe abdominal infection, with pain, tenderness and muscular resistance present over the whole right side of the abdomen. The physical signs

and symptoms were such that we wavered between gallstones and appendicitis, being inclined toward the diagnosis of appendicitis. She had high fever and a large leucocyte count.

An incision was made over the appendix. Adhesions were present everywhere; but indications suggested that the focus of trouble was higher up; so the incision was extended upward, and after a little blunt dissection a pocket was found containing over half a pint of pus. Within this pocket we found this gallstone covered with a gangrenous gallbladder, which had become entirely separated from the liver and cystic duct. With drainage, she made a good recovery. The first case mentioned here was in prime condition for the development of similar complications.

Dr. Borden said that the specimens presented by Dr. Stavely were of great interest and that a distinct lesson might be learned from the histories of the cases. The cases reflected credit on the surgeon for saving the lives of the patients from whom the stones had been removed; but the operations had been done as desperate measures for the relief of terminal conditions, and the cases constitute a strong argument for early diagnosis of cholelithiasis and early selective cholecystotomy. He did not know what were the facts of the earlier histories of these patients, and he made no criticism on the medical care they had received, but the lateness with which surgical aid is invoked in so many cases of cholelithiasis might reflect discredit upon the medical profession. Gallstones should not be allowed to reach the size of the specimens here shown, with the knowledge now available for the diagnosis of cholelithiasis. He recognized that the diagnosis is very difficult at times. Lawson Tait harshly but truly said: "Correct diagnosis is often impossible; only the ignorant expect it and only fools wait for it." The Mayos, with the wealth of material at their doors and with their long experience in the treatment of this disease, still find that they have a margin of error of 6 per cent. in the differential diagnosis of gallstones, appendicitis and duodenal ulcer. The lesson from all these facts is that the physician should not wait for absolute diagnosis in such cases, but subject the patient to the simple and harmless expedient of exploratory laparotomy.

Dr. Roy said that we know that a large number of autopsy subjects have gallstones, but in their lives no symptoms of gallstones had existed; therefore, no diagnosis had been possible in these cases. Patients will not entertain the notion of operation if there are no more symptoms of gallstones than recurrent dyspepsia.

Dr. S. S. Adams mentioned the case of a patient who had been operated on for intestinal obstruction; the obstruction was caused by a gallstone that had lodged at the ileo-cecal valve, but the stone had caused no symptoms previous to the obstruction.

Dr. I. S. Stone remarked that one of our own eminent surgeons had said that gallstones do no harm while quiescent, that they only do harm when they try to get out. This was an improvement on the view of the older surgeons, but we have advanced beyond this position. He cited the case of a woman who is in the care of a capable family physican, and of a very skillful stomach specialist; the symptoms are obscure, but the blood contains only 40 per cent. hemoglobin, and it seems evident that there is a gradual loss of blood from an ulcer somewhere in the intestinal tract; still these medical men will not consent to an operation. The physician in this case would consent to an exploration if he could actually see blood in the stools, but not without this confirmation. In such cases the surgeon cannot be absolutely sure as to the diagnosis, but the exploration is so readily available to clear up any doubts that it ought to be resorted to without delay.

Dr. Borden said that he recognized that there do occur cases of gallstones without symptoms; his remarks applied to those numerous cases in which obscure or indirect symptoms are not properly appreciated and interpreted.

Dr. Williams called attention to the numerous dyspeptics whose ailments are variously diagnosed nervous dyspepsia, nervous indigestion, gastric neurosis, etc. He thought that if these patients could be carefully examined it would be found that many of them are actually suffering from the less patent symptoms of gallstones and that they have been carelessly classified with that large group of so-called functional neurotics, whose ranks might be greatly depleted by accurate diagnostic procedures. A neurosis should be diagnosed by positive signs and not by exclusion. Well equipped neurologists know the signs, and doubtful cases should be referred for advice, and much time would thus be saved.

Dr. J. D. Thomas did not criticize the advice to explore the abdomens of patients who presented symptoms of gallstones, but it must be remembered that the physician often sees these patients for years and that suspicion of gallbladder disease may only gradually emerge from long observation of nondescript symptoms. If the Mayos, in a large surgical practice among patients who have probably been referred to them after just such observation as he had described, find an error of 6 per cent. in differential diagnosis between three separate affections, what would be the percentage of error in the experience of the family practitioners?

CASE OF FATAL MASTOIDITIS.*

By W. K. BUTLER, A. M., M. D.,

Washington, D. C.

Dr. Butler said that the specimen had been removed at autopsy by Dr. D. S. Lamb from a young man whom Dr. Butler had treated at the George Washington University Hospital. The patient had had a chronic otitis media with an intercurrent acute attack, for which he was admitted to the hospital; at the time of admission the acute otitis was subsiding and the temperature was normal. But the temperature quickly went up again, and careful examination was made of the ear, but no evidence of sufficient disturbance was found to account for the systemic symptoms; he was therefore transferred to the medical side for observation. He was a deaf mute, and it was difficult to get information of subjective symptoms, and objective signs were not sufficiently distinct to make a diagnosis possible. After eight days he had a chill, and with this warning the mastoid cells were opened. The outer table of bone was very hard, almost eburnized, but after chiseling it away pus escaped from the cells, and after drainage the patient got better. But the improvement did not last; fever continued, and the patient was evidently ill. The idea of hidden pneumonia as a cause of the fever was eliminated by careful physical examination and blood examination. Repeated blood cultures failed to reveal infection of the blood stream, so that exploration of the lateral sinus was postponed. This was a fatal mistake; for the young man died from septic pneumonia, with multiple abscesses of the lung, and the autopsy revealed an infected thrombus in the lateral sinus. After his septic condition was discovered it was too late, on account of pneumonia, to open the sinus. Why the numerous blood examinations failed to show anything is a question.

Dr. Williams inquired if there had been any symptoms which would indicate involvement of the spinal-accessory nerve in this patient.

Dr. Butler said that there had been no such symptoms, so far as he had been able to observe.

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* Reported, with specimen, to the Medical Society, February 2, 1910.

THE GENERAL PRACTITIONER AND THE SURGEON.*

By WM. A. JACK, Jr., M. D.,

Washington, D. C.

The question of the relations of the general practitioner and the surgeon is one that is ever present with us. These relations will usually adjust themselves, and I will merely present my personal views on the subject. Let it be clearly understood that I have no hammer out for any particular individual. There is a great deal to be said on both sides, and I hope that all those present will join in the discussion of this subject.

The general practitioner may be defined as the physician who makes a specialty of family practice. He is the friend in need, and is expected to respond at any hour of the day or night to the call of the sick or injured—often for very scanty remuneration, and, in many cases, for no remuneration at all. All honor to him that so seldom is he found wanting, and that on his tombstone may be truthfully engraved, "He was good to the poor."

He should be a man of broad mind and have an extensive knowledge of human nature in addition to his skill as a diagnostician and therapeutist.

There is no other field in all the broad domain of medicine that presents such great opportunities for the individual to become skilled in the detection and treatment of human ills.

Every general practitioner should hold before himself the ideal of no active treatment until such time as he is sure of the disease for which he is prescribing.

If every practitioner would keep careful notes of all his cases and classify them under their appropriate heads, in the course of a few years he would have a mass of clinical data the value of which would more than repay the time and effort necessary to gather them. Some may say that the busy man has not the time to keep elaborate notes; but all necessary data for each case could be put down on the back of an ordinary prescription blank, and at some leisure time in the day transferred to some one of the numerous card systems that are sold for this purpose.

The surgeon should be a man of considerable mechanical abil-

* Read before the Medical Society, January 26, 1910.

ity, and his preparation for his life work should begin in the dissecting room, where, by long hours of hard work, he obtains an exact knowledge of regional anatomy. The operating room is no place to study anatomical details.

In addition to at least one year's residence in a hospital with a large surgical service, I look forward to the time when it will be required that a man must be able to show that he has served at least one year as first assistant to a surgeon of recognized ability. Then we shall be spared the pitiful sight, at present so common, of untrained men groping around in the belly or axilla of a defenceless patient when they would be better employed carrying the hod.

The surgeon should limit his work to operations and consultations, and not take an occasional medical case because the patient is able to pay a good fee.

In every case to which a surgeon is called the family physician should have prepared a clear and truthful history, not suppressing any facts, such as recent abortion or syphilis, in order to shield his patient and deceive the surgeon. He should be ready to defend his diagnosis to the last ditch, unless the surgeon can show him by clear, logical reasons and physical signs that he is in the wrong. As a matter of fact, the general practitioner is becoming so skilled nowadays that the surgeon confirms more diagnoses than he disproves.

The calling in of a surgeon should always be done by the family physician; never by the patient or the family unless there is no physician in attendance. The patient has a perfect right to express a preference for a particular surgeon, and, unless the physician knows that the preferred is or has been guilty of unethical conduct, he should agree to the choice or else withdraw from the case. In the majority of cases the choice of surgeon is left to the man in charge, for nearly all patients have great faith in their family physician and do not think any the less of him because he does not pretend to know it all.

The hour of consultation should be so arranged as to be mutually convenient to both physician and surgeon. When fixed it should be strictly adhered to by both, so that the physician will not be delayed in making his other visits or the surgeon be late at an operation that he may have set in the expectation that the physician would be on time. In some cases circumstances over

which he has no control may prevent either the physician or the surgeon arriving on time. In such case it is nearly always possible for the one who is detained to notify the other and fix upon another time that will be convenient to both.

In case the surgeon arrives first he should await the arrival of the physician before examining or questioning the patient, and in the meantime avoid discussing the case with the patient, family or friends. After the consultation the verdict agreed upon should be communicated to the interested parties by the family physician; never by the surgeon unless the physician requests him to do so. The surgeon should get out as soon as possible, and not try to impress the family with his own superiority over the family physician. Surgeons are only human, and it is sweet to have the adulation of mankind. The surgeon's work, and not his mouth, should speak for him.

In case an operation is needed and the patient is sent to a hospital, all arrangements should be made by the family physician and the individual entered as his patient, so that the hospital authorities will recognize him as having charge. The surgeon has no right to take charge of the patient unless requested to do so by the physician. He is called in by the family physician to do certain work for which his training especially fits him, and, in that sense, is really the assistant to the general practitioner.

In the operating room and the after care as long as the operative field needs attention the surgeon must be supreme, but in the treatment of intercurrent affections and the building up of the patient after the wound is healed the family physician is the one to look after the patient. If the patient sends for the surgeon for some other condition than that for which operation was done he should refuse to prescribe or pass an opinion without consultation with the general practitioner.

When possible the family physician should be present at the operation and, if he so desires, be allowed to assist. It is, of course, much pleasanter to have trained assistants, but it is a poor surgeon who cannot make out with any old assistant. The care in preparation of the physician's hands should be superintended by the surgeon, and, by the exercise of a little tact, even a man with no aseptic conscience at all can be made to clean his hands properly. The training thus given to the family physician will work great good to him in his other work.

If competent, and he so desires, the general practitioner should administer the anesthetic. If the surgeon is in doubt as to the family physician's qualifications as an anesthetizer a place should be made for him as assistant, and the anesthetic put in the hands of some one who the surgeon knows is competent, because in many cases the proper administration of the anesthetic is of more importance than the operation itself.

The fee for surgical attention of course must vary with the patient's ability to pay.

The surgeon should have but one kind of service to give—the best that is in him—whether the patient is a poor negro criminal or a millionaire. The pocketbook should never be operated on, but the disease.

Patients should be educated to the fact that the general practitioner is entitled to be paid for his services, and the surgeon must not take all a poor devil may have, but leave cigar money for the family physician. In many cases, however, the family physician, from selfish motives or on account of his friendship for the patient, misrepresents the financial status and persuades the surgeon to accept a less fee than the patient is able to pay.

In case the operation reveals a mistake in diagnosis the operator should be man enough to say, "This is one on me," and not, as is done so often, tell the family physician, "Doctor, you were wrong."

In cases resulting in death it is the operator's business to sign the death certificate and give the true cause of death, not to hunt around to see if by any chance he can put it on the anesthetic or some of his assistants. The operator is responsible for everything connected with the operative field.

O, Surgeons, in the pride of our marvelous achievements in the last twenty years, let us not get the big head, thinking we are made of superior clay, and look not down on the hard-working general practitioner. Remember the lowly origin of our craft, the barber, and that in the old Hippocratic oath we are classed with that stench in the nostrils of ethical men, the abortionist.

Dr. S. S. Adams said that Dr. Jack's paper contained many truths pleasantly told, and many lessons could be derived from it. One thing in the relations of the general practitioner and the surgeon should be borne in mind, and that is: the man who pays

the bill has some rights; in too close insistence upon ethical considerations these rights may be overlooked. To Dr. Adams' mind, the day of the family practitioner, as formerly understood, has passed; the day of the specialist has come, and probably come to stay. When a case in the hands of a physician ceases to be in the category called "medical," and the surgeon is called in, that case should then be entirely in the hands of the surgeon, and the physician should withdraw, unless, after explaining to the family that his services are no longer necessary, they insist that he continue. Dr. Adams condemned the practice of collecting commissions for patients referred to surgeons, and could see no right in the physician's seeking to charge a fee commensurate with the surgeon's fee. He expressed his sympathy for the average head of family in defraying the cost of illness.

Dr. Allen said that Dr. Adams' point had been well taken, but unless the physician accompanies the patient in his excursions into the domain of the specialists, the patient is apt never to get back again.

Dr. E. L. Morgan said that physicians are entitled to reasonable compensation for their services, and that too much sympathy should not be wasted on the public, in view of the notorious abuse of public charity.

Dr. Chappell complimented the paper. He did not believe that the day of the family doctor is over; there should be some one to know the patient, to know all about the patient, and such information can be only derived from long observation by the family physician; surely not by subjecting the patient to the occasional examination of the specialist. Many of the present difficulties can be remedied by the family practitioner; he should insist upon due consideration and respect. Unless the family is willing to rely mainly upon his judgment as to the necessities in any given case and upon his selection of consultants, he should withdraw from the case.

Dr. Hagner said that much of the criticism of specialists arises from the fact that there are some men who seem to be specialists in everything. At this time, however, there are more and more men who are devoting their attention to one line of work and are refusing to do anything else. This should restore the confidence of the family practitioner and should allay much of the present unrest.

Dr. Macatee said that much had been said about what the family doctor should do and what the specialist should do in the matter of controlling the disposition of patients to wander about from specialist to specialist; it seemed to him that the matter is not in the hands of the medical profession at all. The patients make their own diagnosis and go to the specialist they fancy will fit the case; when they gradually discover that they are not safe

guides for themselves in these matters, the family doctor will come into his own again.

Dr. Jack said that the paper merely set forth what he conceived to be the proper attitude and spirit of the physician and surgeon in their relations to each other and to the patient. He believed that each should receive just and adequate compensation for necessary services actually rendered, and that for the poor and needy services should be rendered, as physicians have always rendered them, and charged up to profit and loss.

In Memoriam.

DR. G. C. BURTON.

WHEREAS, Doctor George Correl Burton, a member of this Society, died at Mitchell, Indiana, July 22, 1909, in the 53d year of his age;

Resolved,* That the Medical Society of the District of Columbia herewith expresses its deep regret concerning the death of our fellow member, and directs its Corresponding Secretary to convey our deep sympathy to the surviving members of his family, forwarding a copy of these resolutions and also causing the same to be spread upon the minutes of the Society.

Doctor Burton was born February 26, 1857, at Georgia, Lawrence County, Indiana; graduated in medicine in 1881 at Louisville Medical College; practiced general medicine at Mitchell, Ind., and Fullerton, Nebr., 1882–4; at Louisville, Ill., 1884–6; came to this city in 1886 and continued in practice until his retirement in 1908. Owing to ill health, the result of an accidental operative infection, he went to Hot Springs, Ark.; from there to his former home at Mitchell, Ind., in October, 1908, and died at the latter place July 22, 1909.

Doctor Burton held membership in the Tri-State Med. Soc.; Mitchell (Ind.) Dist. Med. Soc.; Med. Assn., D. C., and Med.

* Resolution adopted by the Medical Society, January 12, 1910.

Soc., D. C., becoming a member of the latter October 1, 1902. He was a charter member of M. M. Parker Lodge, F. A. A. M.

He is survived by his widow, Mrs. Mary (Walker) Burton, of this city, and a daughter, Mrs. Pansy (Burton) Enser, of Jacksonville, Fla.

G. M. Brumbaugh,
Geo. N. Perry,
D. S. Lamb,
Committee.

DR. JOSEPH THEOPHILUS HOWARD.

Whereas, The Medical Society, having learned of the death of Dr. Joseph T. Howard, one of its oldest and most respected members, a man loyal to his profession, an esteemed citizen, a scholarly gentleman and one whose character is worthy of emulation, desires to place on record a testimonial of its appreciation of the merits of Dr. Howard and regret for his death; therefore,

Resolved, That the Medical Society deplores the loss of Dr. Howard and extends its sympathy to his family in their bereavement.

Resolved, That this testimonial of respect be entered upon the records of the Society and a copy forwarded to the family of Dr. Howard.*

(Signed) Thos. C. Smith, M. D., *Chn.*,
J. Dudley Morgan,
E. L. Morgan,
Committee.

DR. THOMAS A. R. KEECH.

Whereas, Dr. Thomas A. R. Keech, one of the oldest and most esteemed members of the Society, has been removed by death from among his professional friends and colleagues, we, the members of the Medical Society of the District of Columbia, hereby express our profound sorrow, as well as our appreciation of our fellow member, in the following resolutions:

* Adopted by the Society February 9, 1910.

Resolved, That in the death of Dr. Keech this Society has lost one of the most genial and admirable members, one whose life and example have always been characterized by strict observance of everything embodied in the word, "Christian gentleman."

It is further

Resolved, That we deplore the loss we have sustained, because everything pertaining to the professional life and work of Dr. Keech was prompted by the highest standard of justice and the application of the golden rule. It is further

Resolved, That we also deplore his loss to the many patients who have long regarded his ministrations as essential to their welfare and who were the recipients of his skillful attention. It is further

Resolved, That a copy of these resolutions be sent to the family of our deceased colleague.*

(Signed) I. S. Stone, *Chn.*,
H. D. Fry,
N. P. Barnes,
Committee.

DR. WILLIAM DAVIS HUGHES.

William Davis Hughes, a member of this Society since October 3, 1894, died at his residence in this city, January 24, 1910, aged 75 years.

He was born June 19, 1835, at Honey Creek Valley, Miami Co., Ohio. He attended the district school and took a classical course at the Academy at New Carlisle, Ohio, and at the Ohio Wesleyan University, at Delaware, Ohio, where he received the degree of A. B. in 1860, and A. M. in 1863. In 1861--2 he was appointed Superintendent of public schools at Fairfield, Ohio, and Examiner of Teachers of Miami County public schools. He studied law and was admitted to the bar in 1864, and the same year he opened an office at Troy, Ohio, in partnership with Hon. H. W. Williams; the firm name was Hughes and Williams. He was elected Mayor of Troy in 1872 and reelected in 1874. In that year he removed to Sydney, Ohio, and in 1880, on the elec-

* Adopted by the Society February 9, 1910.

tion of James A. Garfield to the Presidency of the United States, removed to this city. He attended Howard University Medical Department and graduated in 1884, since which he practiced medicine in this city. He married Clara McCarter, of Columbus, O.

Your committee recommends the adoption of the following :

Resolved, That the members of the Medical Society of the District of Columbia have learned with regret of the death of our late member, Dr. William Davis Hughes, and tender their sympathy to his bereaved family ;

Resolved, That the Corresponding Secretary is directed to forward to the widow of the deceased a copy of these resolutions.*

(Signed) D. S. Lamb, *Chn.*,
Edward A. Balloch,
Norman R. Jenner,
Committee.

DR. WILLIAM PENN COMPTON.

It is our sad duty to inform the Medical Society of the District of Columbia of the death of Dr. William Penn Compton, whose sudden death brings affliction to his family and a loss to the medical profession. His ability as a medical man was never in doubt, and from his beginning practice he ranked high in the profession. His warm, congenial manners and his many special accomplishments held to him for life those who were brought into contact with him. A man of rare versatility, he excelled in everything he attempted. It is

Resolved, That the Medical Society expresses to his family its full sense of the loss of this brilliant member of its body and sends this resolution as a token of sympathy.†

(Signed) A. A. Snyder, *Chn.*,
H. H. Kerr,
Francis R. Hagner,
Committee.

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* Adopted by the Society, February 9, 1910
† Adopted by the Society February 16, 1910

DR. THOMAS TAYLOR.

Dr. Thomas Taylor died January 22, 1910, in his ninetieth year. He was born April 22, 1820, in Perth, Scotland. His early education included a scientific course at the Andersonian University, Glasgow, 1835–8, where he studied chemistry, frictional electricity and galvanism. He was also a student at the Royal Dublin School of Design.

At the age of twenty-one he invented the first interleaved electric condenser, which was a distinct improvement on the Leyden jar. Other inventions of his earlier manhood include a pneumatic battery for igniting explosives for mining and blasting, 1850; a rotary galvanic battery and a safety lamp for miners, and the production of soluble leather. The pneumatic battery designed by him was used for many years in the prevention of mining accidents and also in military mining fortifications, especially during the Crimean War.

In 1851 he came to the United States, and during that year, in a series of experiments across the Narrows at New York City, demonstrated that electricity could be transmitted across sea to a given point without wires. These experiments were noted in the *Scientific American* of that year.

During the Civil War, on account of his inventive genius and expert knowledge of explosives, he became connected with the Ordnance Department of the U. S. Army. While in charge of the Rifle Shell Branch at the Washington Arsenal he invented and improved rifled projectiles. In place of the unreliable projectile which caused the Parrott rifle to be a failure he produced what was known as the Taylor-Dyer projectile, which proved eminently successful in military operations. He also invented reliable time fuses for rifle projectiles, and patented rubber to supersede way molds for plate work. While engaged along these lines of research he also conducted experiments relating to the utilization of condemned ammunition, and devised a safe and inexpensive method by which shells could be broken up and the valuable material utilized. He also invented a process for reducing oxide of lead by bringing it into contact with scrap iron, which reduced the oxide of lead to the pure metallic state, and by this means great quantities of pure lead were recovered from dross.

In 1887 Col. Benton, of the Ordnance Corps, wrote to Mr. Taylor: "I have never failed to give you credit for bringing the Government projectile to its present state of perfection, and I hope the Government will reward you for it." Alas, this hope was never realized, and Dr. Taylor died a poor man.

In 1871 he entered the service of the U. S. Department of Agriculture. At that time the Department possessed but one microscope, which was freely used by him in the study of fungoid diseases of plants. Very soon he found evidence on the foreign grape vines cultivated in the greenhouses of the Department of the presence of the *oidium* mildew which had proved so destructive of the vintage of Europe; he also demonstrated for the first time the higher fruit of this fungus, heretofore unknown to mycologists. He was also the first to discover in this country, although it was known in Europe, the "Pyphlodrumus pyri," a microscopic mite very destructive to the leaves of the pear tree.

His work attracted the attention of such celebrated mycologists as Prof. Berkeley and M. C. Cook, of London, and proved of great economic value to the United States. The position of Microscopist was specially created by law in the Department, and he filled this office with distinction until 1895.

Much of Dr. Taylor's research was pioneer work of great value in subsequent pure food legislation. So, for example, his work on "The Differentiation of the Fatty Crystals of Butter and Oleomargarine," and his researches in adulterations of butter, lard and cheese furnished reliable methods for the detection of butter substitutes and resulted in the enactment of the first oleomargarine bill in this country.

He also wrote a good bulletin on "Tea and its Adulterations;" "Tests for Adulterations in Olive Oil." Among his other more important contributions may be mentioned: "The Students' Handbook of Edible and Poisonous Mushrooms of America;" "The Diseases of Plants;" "Internal Parasites in Domestic Fowl;" "Bacteria and their Relations to Plant Culture;" "The Common House Fly as a Carrier of Poisons;" "Food Products, 1893–4."

In 1882 Mr. Taylor graduated in medicine from Georgetown University; his inaugural dissertation was entitled: "Cryptogamic Parasites and Infectious Germs Considered in their Relation to Man and the Lower Animals," in which he presented an

excellent review of the germ theory of disease and the status of bacteriology at that time. In April, 1884, he was elected a member of the Medical Society. He was a member of the American Association for the Advancement of Science; Hon. member Micros. Section Royal Institute, Liverpool, England, and of the International Society of Hygiene, Brussels; member of the American Chemical Society and French Chemical Society; one of the founders of the Washington Chemical and Biological Societies.

Shortly before coming to this country Dr. Taylor married Miss Marjory McIntosh, only daughter of Alexander and Jane Farrer McIntosh. His son, Dr. Thomas A. Taylor, died nine years ago, and his only daughter survives him.

Dr. Taylor, although not blessed with worldly goods, lived a most enviable life—endowed by nature with a fine physique, a resourceful mind, the genius of the originator and the aptitude for close study—his products were varied and of permanent value. He was of a happy, optimistic temperament, social and humorous, but his gentle humor had no sting, tolerant in judgment, rarely aggressive, yet courageous when there was need. The world is better for having known him.

RESOLUTIONS.*

WHEREAS, It has pleased the Supreme Physician to remove from our midst Dr. Thomas Taylor in his ninetieth year,

Resolved, That by the death of Dr. Taylor the Medical Society of the District of Columbia has lost a member who, by his many important inventions, rendered invaluable services to his country, and by his scientific researches in food products also aided the great cause of humanity;

Resolved, That these resolutions be spread upon the record and a copy thereof be transmitted to his bereaved daughter.

(Signed) G. M. KOBER, *Chn.*,
EDMUND BARRY,
S. S. ADAMS,
Committee.

* Adopted by the Society February 16, 1910.

REPORT OF EDITORIAL COMMITTEE.

WASHINGTON, D. C., *January 12, 1910.*

To the Medical Society of the District of Columbia :

The Committee on Editing the Transactions herewith submits its report for the year 1909 :

Dr. C. S. White resigned from the Committee in November.

The report of the Treasurer shows that the expenses of publishing the WASHINGTON MEDICAL ANNALS for 1909 were $772.79 ; receipts from advertisements, $108.00 ; from subscriptions, $8.00 ; total receipts, $116.00 ; net cost of publishing, $614.79. The number of pages in Volume VIII was 448, with 8 additional pages for the index ; total paging, 456. The total cost, therefore, per page, including all the expenses of the publication, is $1.35.

This is, we believe, the smallest cost per page up to date. It is to be remembered that reprints are paid for by the authors of papers themselves. Some papers are published in other journals; the Society requires that in such cases the authors shall furnish abstracts of the papers for publication in the ANNALS; sometimes this is done, sometimes not.

The ANNALS is sent regularly to the active and honorary members of the Society, and to 57 medical journals. Of these journals 52 are published in this country, one in Mexico, one in Paris, one in Berlin, one at Lisbon and one at Genoa, Italy. Of those published in this country, 30 are published by State or city medical associations. From time to time these journals abstract the original articles appearing in the ANNALS.

D. S. LAMB,
B. G. POOL.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, Monday, January 3, 1910.—The President, Dr. E. A. Balloch, presided ; about 80 members present.

The following applications for active membership were referred to the Board of Censors :

John Allen, Georgetown University, 1908.

Charles Clark Ammerman, George Washington University, 1906.

R. Arthur Hooe, George Washington University, 1906.

Henry W. Miller, University of Toronto, 1895.

F. H. Morhart, George Washington University, 1898.

Elizabeth Sohon, Howard University, 1906.

It was ordered that the regular weekly meetings be resumed on Wednesday, January 12th.

The Corresponding Secretary read a letter from Dr. Kober relative to a proposed plan of coöperation by the Medical Society with the George Washington Memorial Association, with special reference to the making of subscriptions to the fund for the erection of a memorial hall. Referred to the Executive Committee for consideration and report.

The Treasurer's 37th annual report was read.

The receipts were as follows: From admission fees, $90.00; dues for 1907, $104.00; for 1908, $384.00; for 1909, $864.00; assessments for the History, $591.00; interest on bank deposit, $22.37; advertising in ANNALS, $108.00; payments for extra space in ANNALS, $42.00; subscriptions, $8.00; total receipts, $2,123.37.

Expended as follows: Stipend to Recording Secretary, $200.00; to Treasurer, $200.00; rent of hall, $120.00; expenses of Corresponding Secretary, $347.05; expenses Recording Secretary, $15.75; publishing WASHINGTON MEDICAL ANNALS, $772.79; expenses of Committee on History, $1,107.74; miscellaneous, $45.50; total expenses, $2,808.83. Balance on hand, $719.91. The total expense of publishing the History was $2,582.98. Seven members had subscribed for extra copies of the History.

Due for unpaid assessments as follows: For dues, 1908, $228; for 1909, $788.00; for History, $339.00; total dues, $1,355.00. The Society still owed the printer $656.53.

During the year four members had been dropped for non-payment of dues, and four had resigned; the membership January 1st was 432.

The following were elected officers for 1910: President, Dr. Louis Mackall; Vice Presidents, Drs. D. Olin Leech and Philip S. Roy; Corresponding Secretary, Dr. T. C. Smith; Recording Secretary, Dr. H. C. Macatee; Treasurer, Dr. C. W. Franzoni; Librarian, Dr. E. L. Morgan; Board of Censors, Drs. D. Olin Leech, H. B. Deale, J. S. Wall, F. R. Hagner and J. F. Moran.

A vote of thanks was given all of the officers of the Society for their services in the past year.

Those portions of the retiring President's annual address which pertained to the general welfare of the Society were referred to the Executive Committee for consideration and report.

Wednesday, January 12.—The President, Dr. Louis Mackall, presided; about 115 members present.

Dr. Mackall, the President of the Society, was elected to represent the Society as a vice president of the Washington Academy of Sciences.

Dr. D. S. Lamb, for a committee appointed for the purpose, reported resolutions of respect to the memory of the late Dr. Geo. C. Burton, which were adopted. See p. 74.

Dr. Lamb also presented the annual report of the Committee on Editing the Transactions. See p. 81.

The usual assessment of $4.00 per member for the expenses of the current year was levied.

The resignation of Dr. B. Alice Crush from active membership was accepted.

The President announced the following committee assignments:

Executive Committee.—To serve 5 years: G. N. Acker, Francis R. Hagner, J. R. Wellington; 4 years: W. C. Woodward, D. P. Hickling, D. K. Shute; 3 years: S. S. Adams, Wallace Neff, E. W. Reisinger; 2 years: J. D. Thomas, L. W. Glazebrook, T. N. McLaughlin; 1 year: J. D. Morgan, Louis Johnson, C. W. Richardson.

Public Health.—G. Wythe Cook, *Chmn.;* E. A. Balloch, R. W. Baker, Frank Leech, Mary Parsons, S. S. Owens, W. M. Barton.

Essays.—T. C. Smith, *Chmn.;* A. B. Hooe, P. C. Hunt.

Editing the Transactions.—D. S. Lamb, *Chmn.;* B. G. Pool, Prentiss Willson.

History of the Society.—D. S. Lamb, *Chmn.;* C. W. Franzoni, G. Wythe Cook, R. T. Holden, L. Eliot.

Library.—E. L. Morgan.

Microscopy.—Roy D. Adams, *Chmn.;* J. A. O'Donoghue, R. A. Hamilton.

Report from Milk Commission requested; no appointments to this Commission until submission of report.

An appropriation of $176.05, for publication of the January number of the ANNALS was granted.

Dr. D. S. Lamb presented an application from Dr. Ciriaco Yrigoyen, of San Sebastian, Spain, for admission to the Society as a foreign member (membre étranger). The constitution providing no such form of membership, the application was referred to the Executive Committee for consideration and recommendation.

Dr. J. Ford Thompson entertained the Society with a most interesting and eloquent address, in which he recounted some of his reminiscences as student and practitioner of medicine and surgery. A rising vote of thanks was given Dr. Thompson for his address.

Wednesday, January 19.—The President, Dr. Mackall, presided; about 70 members present.

Dr. C. W. Richardson reported for the Executive Committee, recommending—

That the plan for the participation by the Medical Society in the erection of a building by the George Washington Memorial Association, as suggested in a letter from Dr. Geo. M. Kober, be adopted by the Society, and that the existing committee having this project in hand be instructed to endeavor to secure subscriptions to the amount of $4,000.00, payable in the next three years;

That the application of Dr. Ciriaco Yrigoyen for admission as foreign member be acknowledged, and that the applicant be informed that the Society's constitution provides no such form of membership.

The recommendations were adopted.

The resignation of Dr. Elizabeth B. Muncey was accepted.

Dr. D. S. Lamb presented the following specimens: 1. Sarcoma of the back; 2. Cysticercus cellulosae from liver of rat. The specimens were presented in part to demonstrate a new method of mounting in gelatin, using two Petri dishes, uniting them with paraffin and using a white paper background.

Dr. T. C. Smith presented a specimen of Gallstone and related the history of the case.

The stone had been passed a few days before by one of his patients under the following circumstances: The patient was a woman, 70 years old, who had been operated upon a year ago by Dr. Bovée for cancer of the uterus. A week ago she was taken sick the principal symptoms being pain and a tumor in the region of the gallbladder. This made an interesting problem in differential diagnosis; but the question whether the condition was one of gallstone or of metastatic cancerous invasion of the gallbladder was answered by the passage of the specimen, together with bloody mucus. The stone must have escaped by ulceration into the bowel; but the fact that this patient recovered does not constitute a proper argument for waiting for such an accidental cure to take place in cases of gallstones under other circumstances.

Dr. A. L. Stavely read an essay: "The Treatment of Post-operative Adhesions." Discussed by Drs. I. S. Stone, Bovée, Borden, Reichelderfer, G. Brown Miller, Hooe, Williams and Stavely. See p. 1.

Dr. Tom A. Williams read a paper upon "Chronic and Persistent Headache; Recent Neurological Advances in its Diagnosis and Treatment." Discussed by Drs. P. C. Hunt and Williams. See p. 16.

Wednesday, January 26.—The President, Dr. Mackall, presided; about 50 members present.

Captain Wm. T. Davis, Medical Corps, U. S. A., was elected a member by invitation.

Dr. Wellington reported a case of Sarcoma of the Kidney in an infant, and presented a specimen. See p. 43.

Dr. D. S. Lamb presented for Dr. Ober specimens from a case of General Sarcomatosis.

Dr. Jack read the paper for the evening: "The General Practitioner and the Surgeon." Discussed by Drs. S. S. Adams, Allen, E. L. Morgan, Chappell, Hagner, Macatee, Franzoni and Jack. See p. 69.

Wednesday, February 2.—The President, Dr. Mackall, presided; about 60 members present.

The Treasurer reported for the month of January: Receipts, $636.00; disbursements, $532.63.

The following resolution was adopted: That the President appoint a committee of at least three members to attend the funeral of any deceased member of the Society.

The Chair announced the deaths of five members, and appointed committees to report resolutions of respect to their memory. The names of the deceased members and the respective committees are as follows:

Dr. Thomas Taylor.—Committee: G. M. Kober, *Chn.;* S. S. Adams, Edmund Barry.

Dr. Wm. D. Hughes.—Committee: D. S. Lamb, *Chn.;* E. A. Balloch, N. R. Jenner.

Dr. Thos. A. R. Keech.—Committee: I. S. Stone, *Chn.;* H. D. Fry, N. P. Barnes.

Dr. Wm. P. Compton.—Committee: A. A. Snyder, *Chn.;* H. H. Kerr, Francis R. Hagner.

Dr. Jos. T. Howard.—Committee: T. C. Smith, *Chn.;* J. D. Morgan, E. L. Morgan.

Dr. W. K. Butler presented a specimen of Disease of the Temporal Bone from a fatal case of mastoiditis. Discussed by Drs. Williams and Butler. See p. 68.

Dr. A. F. A. King read a paper entitled; "Measles and Mice. Does the Microbe of Measles come from the Mouse?" Discussed by Drs. Kober, Kinyoun, S. S. Adams, Williams, D. S. Lamb, Chappell and King. See p. 49.

Dr. W. P. Carr reported a case of Gallstone Diabetes and presented the specimen. See p. 25.

Wednesday, February 9.—The President, Dr. Mackall, presided; about 60 members present.

Dr. T. C. Smith reported resolutions of respect to the memory of Dr. Joseph T. Howard; Dr. D. S. Lamb reported resolutions of respect to the memory of Dr. William Davis Hughes, and Dr.

I. S. Stone reported resolutions of respect to the memory of Dr. Thomas A. R. Keech; all of which were unanimously adopted. See pp. 75 *et seq.*

Dr. Balloch presented specimens and case reports as follows: 1. Adeno-carcinoma of the colon; 2. Ulcer of duodenum. Discussed by Drs. I. S. Stone, Chappell and Balloch. See pp. 44 and 41.

Dr. Stavely presented specimens of Gallstones with case reports. See p. 61.

Dr. Merrill presented a radiograph of one of the cases reported by Dr. Stavely. Discussed by Drs. Borden, Roy, S. S. Adams, I. S. Stone, D. S. Lamb, Williams, J. D. Thomas and Stavely. See p. 61.

Dr. Tom A. Williams exhibited a new instrument for the clinical examination of the sensibility. Discussed by Drs. Phillips and Williams. See p. 46.

Dr. W. M. Barton made a preliminary report on "The Elimination of Urotropin through the Middle Ear and its Possible Application to the Treatment of Suppurations in that Organ."

Dr. E. P. Magruder read the paper for the evening: "Fracture of the Patella; the Operation of Choice Demonstrated." Discussed by Drs. Vaughan, Balloch and E. P. Magruder.

WASHINGTON MEDICAL ANNALS.

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Editorial.

HIGH TYPHOID MORTALITY IN WASHINGTON HOSPITALS AND THEIR MILK SUPPLY.

The subject of the high mortality rate from typhoid fever in the hospitals of the District of Columbia, and its possible connection with the milk supplied to patients at these institutions, has recently been studied by Drs. G. Lloyd Magruder and Geo. M. Kober and Mr. Emile Berliner, of this city. The results of their deliberations have been most significant.

The Washington Milk Conference of 1907, which was participated in by a number of prominent sanitarians, not only of this municipality proper, but also from the great scientific bureaus of the National Government, decided that the limit of safety for milk to be consumed in the raw state was reached when it contained not more than 100,000 bacteria per cubic centimeter; it should be stated that the majority of such bacteria found in raw milk are usually harmless, or may even be beneficial. Beyond this limit of safety the Conference decided that all milk containing more bacteria should be pasteurized in order to insure against possible infection from pathogenic bacteria, which usually constitute a certain percentage in common market milk.

Soon afterwards the Hygienic Laboratory of the U. S. Marine Hospital Service collected samples of milk as found in different localities in Washington, and among such samples were those from a half dozen or more prominent hospitals and asylums. The minimum count and estimate of bacteria found in these samples was one containing 340,000 bacteria; the others ran as follows:

Limit of safety for raw milk: 100,000. The following were found in milk furnished to Washington hospitals: 2,000,000 bacteria per cm.; 2,800,000; 3,500,000; 4,000,000; 5,000,000; 10,000,000; 10,000,000; 15,000,000; 50,000,000; 111,000,000. [See Bulletin 41, Bureau of Public Health and Marine Hospital Service, page 431, *et seq.*].

A prominent Washington physician was shortly afterwards asked the following question by an interested investigator. Supposing a typhoid fever patient was put on a milk diet and the milk was given in a raw or imperfectly pasteurized state and was high in bacterial count, would not that aggravate the seriousness of the case? The answer was that this would most likely be the result.

Now, the average rate of mortality from typhoid fever in the United States is 10 per cent.; in Germany it is 4 to 5 per cent. The disease, moreover, is vastly more prevalent in the United States than in Germany, and there appears to be this significant reason for it, that whereas in this country most milk is consumed raw, in Germany most milk is consumed after having been either scalded or boiled. A further noteworthy fact brought out by the Hygienic Bureau here during the past two years was that among

the patrons of dairies which sell mostly properly pasteurized milk there occur much fewer cases of typhoid than among patrons of dairies which sell only raw milk. Besides, there is considerable difference between milk carefully pasteurized and so-called commercially pasteurized milk, the latter often swarming with bacteria after the milk has been rushed through the process.

Hence, there can be no surprise in finding that there occurs an abnormally high mortality from typhoid in Washington hospitals, because they dispense milk of an unusually high bacterial count and give it to the patients raw, or, at best, improperly pasteurized.

The mortality from typhoid in some Washington hospitals reaches the appalling rates of 25, 20, 18 and 16 per cent., although a few have the normal death rate of 10 per cent. But in only one instance was the German mortality rate of 5 per cent. approached, and this was as low as 7 per cent.

We must add to this the danger from raw milk or improperly pasteurized milk in other sicknesses when the natural resistance to disease is broken down, and the favorite milk diet is prescribed without the physician inquiring into the character of the milk the patient is given. But while ordinary households can guard against infection by home pasteurization or scalding, the patients in hospitals cannot do this, and must trust entirely to the watchfulness and the intelligence of the nurses, physicians and hospital authorities.

Dr. David L. Edsall, of Philadelphia, who has made an exhaustive study of the milk problem in hospitals, says of raw milk as a source of aggravating diseases: "It is evident that patients are not properly treated unless this source of danger is put aside," and he cites instances where an immediate reduction in the conditions and of typhoid mortality in a hospital was brought about by the pasteurization of milk.

That the danger from raw or improperly pasteurized cream is even greater than from improperly pasteurized milk lies in the fact that the rich top milk or the cream separated from milk contains about 60 per cent. of the total bacteria, although constituting only about 1/20 of the volume of the whole milk.

Since it became known that these studies were being made a couple of our hospitals have taken steps for remedying matters, but the three sanitarians who are investigating these vital prob-

lems believe that nothing short of proper pasteurization of all doubtful milk and cream will ever accomplish a material reduction in the general death rate. Moreover, they are urging the necessity of municipal control over all pasteurization plants, so that the people may not be lured into false security by the mere word "pasteurized," when it refers to an imperfect process which may be worse than no process at all.

In this opinion they are backed up by the able scientists of the National Government, both of the Agricultural Department and the Surgeon General's Office.

When water contains a large number of bacteria it will appear cloudy. Moreover, bacteria will but slowly multiply in ordinary drinking water, because there is little nourishment for the bacteria to feed on and multiply. But milk, on account of its opaqueness, readily conceals the presence of even myriads of them. This danger is increased by the fact that at ordinary temperature, and because milk offers a good supply of nourishment, the bacteria increase at a most amazing rate, and this increase, for instance, is approximately seventy times greater at a temperature of 60 degrees F. than at 50 degrees F.

This explains the high infantile mortality in summer time among children fed on raw or improperly pasteurized milk which has been permitted to warm up in transit and in handling; and the number of patients of all classes who annually succumb, because in their weakened state they fall ready victims to raw-milk bacteria, can only be surmised.—G. L. M.

Osteopathy.—The daily papers publish the statement that as the result of a recent conference with the District Commissioners the latter decided to recommend the passage, with amendments, of the bill now in Congress to regulate the practice of osteopathy in this District. One proposed amendment is said to provide that osteopaths shall be subject to the same rules and regulations as regular physicians regarding death certificates and the public health, except that they will not be permitted to treat contagious diseases, nor administer drugs or medicines, except in emergencies. Nor shall they treat maternity cases. Another amendment said to be recommended is that the course of osteopathic

study shall be 32 instead of 27 months, as at present; apparently four years of 8 months each.

The criticism that obviously occurs to the regular physician is that there is apparently no way to carry out the amendments. So far as the increased length of curriculum is concerned, it is possible that the osteopaths who may constitute the examining board may not meet the standard. So far as the other amendments are concerned, the question at once arises as to how they can be carried out. How can the osteopathist be prevented from treating contagious cases or maternity cases; and how can he be prevented from using drugs and medicines? In the history of all peculiar methods of practicing medicine has it not occurred that the practitioners have attended practically all forms of disease and used all sorts of treatment beside their own special kind that appeared to them to promise benefit? Certainly it has been the experience of regular physicians who have practiced for any length of time, to have met with cases that have been treated in the way stated. In other words, the osteopathic practitioner may be expected to consider the side of self, and follow what seems to him to be expedient, the law on the subject to the contrary notwithstanding.

The only proper course to pursue by the regular physician, it seems to us, is to secure, as soon as practicable, a law on the plan of the New York or Texas law, or a law on the same basis of some other State, that will prescribe an examination in all subjects included in the study of medicine, except those that relate to actual practice, namely, materia medica, therapeutics and "practice of medicine," as it is usually termed. This assures that the candidate will have a proper basis for his work as a practitioner, and can then practice in any way that seems best to him, according to any theory of treatment of the value of which he is convinced. This is in fact what all practitioners do, as it is.

One great advantage of such a law is that there is but one examining board, whereas now in this District there are three, and with the osteopathic board added there would be four. Under such a law, also, those persons thereafter who should want to practice some peculiar form of treatment would be required to show, first, that they possessed at any rate an educational basis that would entitle them to practice. As matters are now we may look forward to additional boards, from time to time, to

meet the advent of future forms of peculiar treatments for per sons who lack a sufficient educational basis.

VIVISECTION.—The following publications are available for information in regard to vivisection. They are pamphlets published by the Council on Defense of Medical Research of the A. M. A. One is entitled "Vaccination and its relation to animal experimentation," by Dr. J. F. Schamberg, Philadelphia. A second is "Animal experimentation and tuberculosis," by Dr. E. L. Trudeau, of Saranac Lake, N. Y. A third, "The rôle of animal experimentation in the diagnosis of disease," by Dr. M. J. Rosenau, of the U. S. Public Health and Marine Hospital Service. A fourth, "Animal experimentation and cancer," by Dr. James Ewing, of New York. The fifth is "The Ethics of Animal experimentation," by Prof. J. R. Angell, of the University of Chicago. These publications are timely and furnish the practitioner and layman both with the facts and arguments of and for animal experimentation.

REFRACTING OPTICIANS.—Dr. James Thorington, of Philadelphia, an eminent ophthalmologist, read a paper on this subject in September, 1909, before the appropriate section of the Medical Society of Pennsylvania. It was published in the *Penna. Med. Jour.*, Feb., 1910, pages 369 to 380. It is a comprehensive paper. It sets forth the contentions of the optometrist and replies thereto. It also details the actual practices of the optometrist. Inasmuch as in all probability application will sooner or later be made to Congress for a law legalizing the practice of what is called optometry, in this District, it would be well for the physicians here to inform themselves upon the facts and be prepared to meet the case when it arises.

PHYSICIANS IN POLITICAL LIFE.—*Northwest Medicine* for January, 1910, page 18, states that a Dr. Carll had been elected Mayor of Oregon City for the third time; Dr. Wallace, Mayor of Albany, also for the third term; Dr. Smith, Mayor of Grants Pass for the third time; Dr. Bailey, Mayor of Hillsboro for the second time; Dr. Straw, Mayor of Marshfield for the second time.

It seems as if it is necessary that physicians take interest, and a prominent interest, in public affairs in order to secure regulations and legislation tending to the betterment of sanitary conditions and the protection of communities against quackery. Irregular practitioners are resorting to all manner of devices to get a foothold. In Massachusetts the osteopaths have had introduced into the assembly a bill to authorize them to grant the degree of M. D. The patent medicine men are also seeking to avoid the pure food and drug laws by working through the express companies instead of the post office, and in other ways. Physicians are the only persons who can be depended on to resist these baneful efforts.

"Their Master's Voice."—Under this heading the *New York State Journal of Medicine*, January, 1910, page 1, states that at a certain hospital in New York City the board of managers has made a rule classifying the visiting surgeons and ranking and assigning them to duty not according to their fitness or length of service in the hospital, but according to the number of pay patients that they have sent to the hospital during the previous year.

The same journal and issue states that prosecutions have been successfully conducted against a number of medical "corporations." The decision of the courts was that under the law a corporation could not practice medicine; only the individual physician, who must also be registered. The prosecutions put out of business several such corporations. Under the law, also, several physicians were disbarred from practice; two of them had been convicted of attempting criminal abortion; another of selling abortion drugs.

The American Druggists' Syndicate.—The *Jour. A. M. A.*, Jan. 22, 1910, page 303, contains a statement that this syndicate, known as the A. D. S., is a coöperative patent medicine concern.

Vasectomy, for the Prevention of Propagation.—This operation is frequently mentioned in the medical journals, and seems to be growing in favor as a means of cutting down the

number of mental and moral defectives. As already several States have passed laws that prescribe the operation for the purpose stated, and as the results so far reported are very encouraging, it would be well to agitate the subject as far as this District is concerned. This District should not be backward in securing the improvements in the criminal code that tend to the general betterment of society. A bill for the purpose has been introduced into the General Assembly of Virginia.

MEDICAL DEFENSE SOCIETY.—The question is asked whether it would be advisable to organize in this city such a society. If any member of the Medical Society thinks that it is, a communication on the subject would be printed in the ANNALS.

AUTHORS OF PAPERS published in the ANNALS are reminded that their papers, galley proofs and corrections should not be sent directly to the printer, but to the Chairman of the Editorial Committee. The printer understands this, and is sometimes put to the trouble of sending papers to the Editor which should have come to the latter in the first place.

AS MOST OF THE MEMBERS OF THE SOCIETY are also members of the American Medical Association, and therefore receive the journal of the Association, extracts or abstracts from the journal are made for the ANNALS only in rare cases.

MINERAL SPRINGS.—It would appear that the benefit from water of mineral springs is due more or less to the radioactivity of the water.

THE FOLLOWING is a list of members of the Society now living who were elected before 1870:

1. Warwick Evans, February 1, 1864.
2. Thomas C. Smith, July 4, 1864.
3. J. Ford Thompson, July 4, 1864.
4. A. F. A. King, July 4, 1864.
5. S. W. Bogan, July 4, 1864.
6. Ralph Walsh, October 3, 1864.

7. J. W. Bulkley, December 12, 1864.
8. H. A. Robbins, November 22, 1865.
9. A. Behrend, August 1, 1866.
10. O. M. Muncaster, February 27, 1867.
11. J. Taber Johnson, May 1, 1867.
12. D. S. Lamb, September 25, 1867.
13. V. McNally, November 13, 1867.
14. C. V. N. Callan, March 25, 1868.

Arranged in order of age these names are as follows:

Bulkley, born in 1824; Evans, 1828; Thompson, 1837; Robbins and McNally, 1839; Muncaster and Bogan, 1840; King, Behrend and Walsh, 1841; Smith, 1842; Lamb, 1843; Callan, 1844; Johnson, 1845.

Ninth Decennial Convention for the Revision of the Pharmacopœia of the United States of America.—In accordance with the provisions of Article VIII, Chapter 1, of the By-Laws of the U. S. Pharmacopœial Convention, the President of the Convention hereby invites the several bodies, entitled under the Constitution to representation therein, to appoint delegates to the First Decennial Meeting of the said Convention to be held in the City of Washington, May 10, 1910.

The following list of delegates to the Pharmacopœial Convention of 1910 is offered for publication "without prejudice," it being understood that such publication does not of necessity mean that these delegates will be received and seated by the Convention, as their credentials have not as yet been passed upon by the Committee on Credentials and Arrangements.

Attention is invited to a ruling of the Committee on Credentials and Arrangements, that it cannot recognize the right of any one individual to represent more than one organization or institution.

Medical Society of the District of Columbia.—Murray Galt Motter, John W. Chappell, D. Webster Prentiss.

George Washington University, Department of Medicine.—Sterling Ruffin, B. M. Randolph, Noble P. Barnes.

Georgetown University, School of Medicine.—George M. Kober, G. Lloyd Magruder, W. M. Barton.

George Washington University, National College of Pharmacy.—Henry E. Kalusowski, Samuel L. Hilton, Lewis Flemer.

Alternates—Samuel Waggaman, Frank P. Weller, Wymond H. Bradbury.

Howard University Medical College.—William H. Seaman, John W. Mitchell, J. Herve Purdy. Alternates—D. S. Lamb, Collins Marshall.

Howard University Pharmaceutic College.—Paul Bartsch, George N. Perry, Herbert C. Scurlock. Alternate—Edgar B. Keemer.

Something Further in Regard to the Examination for Registration of Physicians in the District of Columbia. —A word about the penmanship of papers presented by candidates. The answers are in script. Some day, perhaps, typewriting will become so nearly universal that the examinations will be written in that way. Until that time, however, the examiner will be compelled to pore over many almost illegible pieces of writing that defy, or nearly so, his efforts at interpretation. It goes without saying that such a condition is not helpful to the candidate; in estimating the value of an answer the examiner's loss of time and perhaps fruitless efforts must be taken into account.

The matter of capitalization and punctuation. In some papers there is hardly a semblance of punctuation; the writer's ideas are expressed in a continuous stream, without a ripple to break the smoothness. In order to get at his meaning it is necessary now and then to drive a stake, so to speak, on the bank of the stream, to which reference can be made. To make matters worse some of these non-punctuating candidates appear to have an aversion to capital letters. They begin a sentence with a small letter and, as the printers would say, all is *lower case*. However good in other respects such a paper may be, it would be expecting too much to expect a maximum mark. Where Poupart, Bell, Douglas, Gram, Loeffler, Koch and the other eminent names in medicine are thus belittled the discourtesy should not pass unpunished. Again, some other candidates capitalize overmuch.

The way in which clauses and phrases and sentences are put together and ideas expressed by some candidates would be tolerated, perhaps, in a child of tender years, but is deplorable in a mature individual, and in a graduate in medicine is positively disgraceful. Unless a candidate is unduly hurried in his exam-

ation it is his duty and to his advantage as a member of an educated profession to write a paper of a fairly good literary character.

Some candidates have a habit of abbreviating words, especially technical words. This may cover up more or less ignorance of the proper spelling of the words. There is a small range within which the use of abbreviations may be tolerated, but the practice is carried to excess.

It would surprise any one not cognizant of the fact to notice how often singular nouns and plural verbs are connected with each other as substantive and predicate, and *vice versa;* and how often in the use of Latin words or Latin derivatives the numbers are mixed up. It is unnecessary to give instances of this. It shows, however, that there is much ignorance on the part of candidates, or, if not ignorance, then carelessness; most likely the former.

The frequency with which the relative pronouns, especially the pronoun "it," are improperly used, may be mentioned. The meaning of the candidate can usually be made out, but the ingrammaticism nevertheless is there.

Words are used that do not express the meaning intended, as the use of the word surface for border, of notch for groove, of covering for lining, of interior for internal, two words that anatomically are used in a different sense. The confusion of such words as filiform and punctiform, of coronoid and coracoid, of blood plasma and blood serum, of epithelium and endothelium, may be mentioned. These are only a few of many examples that might be given of confusion of words. There may be added to the list the use of the word respectfully for respectively that is occasionally noticed.

There is a habit that some candidates have of using the relative *you* instead of *we* or *one*. The candidate says that you have sarcoma, or the plasmodium of malaria, or the spirochaete of syphilis, or some other disagreeable thing, instead of using the words we or one. Custom sanctions the use of we or one by the editor and teacher; the use of you by the student or candidate to the examiner is unwarrantably personal and is certainly not good form.

Josh Billings said that he did not think much of a man who could not spell a word in more than one way; to some extent

what is called the revised spelling is acceptable, but there is just cause of complaint against some candidates in that their peculiar spelling is not always in the direction of simplification; for instance, anteriorally and posteriorally; neucleus with the superfluous *e;* serious for serous, as a serious membrane; the addition of the terminal *r* to such nouns as scapula, ulna, tibia, fibula, patella; the word border spelled boarder, puss for pus, torturous for tortuous, etc.

Some words are shortened, and this might be considered as simplifying, as the use of *of* for off, occasionally *thy* for thigh and *nee* for knee, *sholder* for shoulder, *absess* for abscess. Some words are spelled apparently according to the candidate's idea of phonetics; as contack for contact, shaf for shaft, effected for affected, motal for motile, assending for ascending, ducks for ducts, membrain for membrane, excessory for accessory, buxinator for buccinator, lava for larva, principle for principal, jugler, visera, argar for agar, humorous for humerus. The words *odvent tissue* were used for adventitia, the outer coat of an artery, by otherwise one of the best candidates; he made many similar mistakes in spelling,

There is another curious lapse in spelling by some candidates, such as spelling throax for thorax, larnyx and pharnyx for larynx and pharynx.

Of technical words, the mistakes in spelling are legion; some words are spelled in many different ways; among these are symphysis, pterygoid and, what seems a simple word, cartilage. Carbol fuchsin troubles some candidates.

There is a good deal of unfamiliarity with the Latin declensions, especially of neuter nouns, as spirillum, flagellum, spiculum, medium and the like, words that form the plural in *a* and not in ae, as so many candidates write it.

The improper doubling of consonants in some words and the failure to double them in others may be mentioned.

A grove and groove are different things. To speak of fracture of the ileum is absurd, and rupture of the coats of the ilium is equally absurd. The perineal arteries are in a very different region from the peroneal arteries.

The spelling of diminutives, like ventricle, auricle, etc., is confused with that of other words not diminutives, as cervical.

Some words are superfluously used, as where the candidate writes that an artery ascends upward or descends downward.

This subject might be amplified, but what has already been said is enough to show some of the deficiencies of candidates and suggest some of the ways in which there is opportunity for future candidates to avoid the mistakes of their predecessors.

THE ANNALS will publish any local medical news concerning the medical societies, hospitals, colleges and other institutions in this District, and the personnel of the same, whenever such news would be of general interest; provided, of course, that the information is given by persons who are known to the Editorial Committee.

THE HIPPOCRATES SOCIETY, the object of which is "the cultivation and promotion of knowledge in whatever relates to the science of medicine and surgery," holds meetings on the second and fourth Thursdays of each month from October to May. The membership in this Society is limited to 25. The officers for the present season are: President, Dr. Edgar Snowden; Vice President, Dr. Arthur L. Hunt; Secretary and Treasurer, Dr. Laurence M. Hynson.

Schedule of Meetings for the Balance of the Session of 1909–10.

Date.	Place.	Essayist.
Mar. 10.	Dr. Carl Henning, The Rochambeau	Dr. D. G. Smith.
Mar. 24.	Dr. D. G. Smith, 3121 Fourteenth St	Dr. C. S. White.
Apr. 14.	Dr. C. L. Davis, 1342 Q St	Dr. Edgar Snowden.
Apr. 28.	Dr. E. L. Mason, 1909 Fourteenth St	Dr. L. M. Hynson.
May 12.	Dr. C. S. White, The Farragut	Dr. J. Lewis Riggles.
May 26.	Smoker	President's Address.

THE THERAPEUTIC SOCIETY meets on the first Saturday in each month at the G. W. College of Pharmacy, 808 I Street, N. W. Secretary, Dr. S. R. Karpeles, 1102 Fifth Street, N. W. Physicians invited.

WASHINGTON MEDICAL AND SURGICAL SOCIETY.—President, H. Atwood Fowler; Vice President, Chas. M. Emmons; Secretary, Geo. H. Heitmuller; Treasurer, Frank E. Gibson; Curator and Librarian, W. G. Erving.

Program—1909–1910.

Essayist.	Date and host.	To open discussion.
Dr. Jack	Mar. 28, 1910, Dr. Miller	Dr. Fowler.
Dr. Kaufman	Apr. 25, 1910, Dr. Mitchell	Dr. Erving.
To be selected	May 16, 1910, Annual Banquet	— ———
Dr. Fowler, President's Address,	Oct. 24, 1910, Dr. Nevitt	— ———
Dr. Miller	Nov. 28, 1910, Dr. Egbert	Dr. Emmons.
Dr. Mitchell	Dec. 26, 1910, Dr. Gannon	Dr. Clark.

Woman's Medical Society, D. C., meets on the second Tuesday of the month, October to May, at the homes of the members. President, Dr. Mary Parsons; Vice President, Dr. Sophie Nordhoff Jung; Secretary-Treasurer, Dr. Emma Lootz Erving.

Physiologic Therapeutics.—Those of our readers who are interested in this subject (including Hydrotherapy, Electrotherapy, Massage, Hyperemia, etc.) will be glad to know that it is proposed to shortly inaugurate a new journal devoted solely to the delineation of the progress made in these lines of therapeutic endeavor.

The American Journal of Physiologic Therapeutics will be published bimonthly and the subscription price will be $1.00 a year. The names and addresses of all interested physicians should be sent in, and those desirous of subscribing at once may enclose their remittance when writing. It is to be hoped that a widespread interest may be aroused in this matter. Write *now*, while this is fresh in your mind, to *The American Journal of Physiologic Therapeutics*, 72 Madison Street, Chicago.

Exchanges.

American Journal Surgery.
Buffalo Medical Journal.
Bull. El Paso Med. Society.
California State Journal Medicine.
Colorado Medicine.
Cronica Medica Mexicana.
Illinois Medical Journal.
Journal Camden Co. Medical Society.

Journal Kansas Medical Society.
Journal Medical Society New Jersey.
Journal Missouri State Medical Association.
Journal National Medical Association.
Journal South Carolina Medical Association.
Louisville Monthly Journal Medicine and Surgery.
Maryland Medical Journal.
Monthly Cyclopedia and Medical Bulletin.
New York State Journal Medicine.
Northwest Medicine.
Old Dominion Journal of Medicine and Surgery.
Pacific Medical Journal.
Pathologica, Genoa.
Pennsylvania Medical Journal.
Providence Medical Journal.
Texas State Journal Medicine.
Virginia Medical Semi-Monthly.
West Virginia Medical Journal.

Books and Pamphlets Received.

A. F. A. King, "The Significance of Position in Obstetrics;" reprint.

J. W. Bovée, "Renal Excretion during the Administration of Chloroform and Ether in Gynecological Surgical Operations;" also, "Method of Complete Nephro-ureterectomy in Women;" reprints.

Annals of Clin. Laboratories, Paris, France, Sept. to Dec., 1909.

E. Souchon, "The Philosophic Anatomy of the Tongue;" reprint.

S. G. Dixon, "The Family Physician," Pennsylvania Health Bulletin, No. 3, Sept., 1909.

W. A. Wells, "Diseases of the Ear Complicating Measles and Scarlatina;" reprint.

W. H. Schultz, "Quantitative Pharmacological Studies; Relative Physiological Activity of Some Commercial Solutions of Epinephrin;" Bull. 61, Hygienic Laboratory, Jan., 1910, U. S. P. H. and M. H. S.

Twenty-third Annual Report of the Washington Hospital for Foundlings, D. C., Nov. 30, 1909.

W. H. Hough, "Case of Juvenile General Paralysis;" reprint.

J. F. Russell, "Treatment of Pulmonary Tuberculosis, Based on the Assumption that the Dietetic Cause of the Disease is Lime Starvation;" also, "Preliminary Report of Results;" also, "Discussion of the Hypothesis;" reprints.

Albert Abrams, "Spondylotherapy," San Francisco, Cal.; 420 pages; 100 illustrations.

M. G. Motter and M. I. Wilbert, "Digest of Comments on the Pharmacopœia of the United States of America;" Hygienic Laboratory, Bull. 58, Dec., 1909, U. S. P. H. and M. H. S.

E. G. Beck, "Surgical Treatment of Tuberculous Pleurisy, Lung Abscess and Empyema;" also, "Diagnostic Aids in Diseases of the Lung and Pleura;" also, "Some Practical Points in the Application of the Bismuth Paste in Chronic Suppurative Diseases;" reprints.

J. H. Kastle, "The Oxidases and other Oxygen-catalysts concerned in Biological Oxidation;" Hygienic Laboratory, Bull. 59, U. S. P. H. and M. H. S., Dec., 1909.

Publications U. S. P. H. and M. H. S., 1910.

J. F. Moran and W. M. Sprigg, "Committee Report on the Preventive Treatment of Ophthalmia Neonatorum;" reprint.

W. C. Lusk, "An Injecting Fluid for Preserving Cadavers for Dissection;" also, "A Technique of Resection of the Male Rectum;" reprints.

L. L. Lumsden, "What the Health Officer can do in the Prevention of Typhoid Fever;" U. S. P. H. and M. H. S., 1910.

Proceedings of the National Confederation of State Medical Examining and Licensing Boards, 19th Annual Convention, Atlantic City, N. J., June 7, 1909.

Arthur Macdonald, "Beitraege zu der Entwicklung und den Entwicklungsfehlern der Kinder;" reprint.

A Financial Success.—"So you were successful in your first case, doctor?"

"Er—yes, yes, the——er——widow paid the bill."—*Tatler.*

Medical Miscellany.

Old Age.—Lorand, in his book, "Das Altern," gives the following rules for long life (*N. Y. Med. Jour.*, Dec. 11, 1909, p. 1179): "Exercise daily and be as much as you can in the open air and sunshine, but avoid great heat. Eat meat only once a day and then in small quantities; your main food should consist of milk, eggs, cereals, butter, cheese, vegetables and fruit; abstain from meat entirely every third month; masticate well. Take a daily bath and once a week a hot bath. Pay proper attention to bowels, with a light laxative once a week. The dress should be sensible; the clothes must be porous; the shirt collar should be wide; the dress in summer of light, in winter of dark colors; always wear low-cut shoes. Follow the old rule of early to bed and early to rise. Sleep with open windows, not less than six hours and a half—a man not more than seven and a half, a woman eight and a half hours. Rest one day every week, and spend your time from Saturday to Monday in the country. Avoid excitement; do not worry, for by worrying you cannot change anything; do not speak of disagreeable things. Have a strong will power. Avoid overheated places. Be moderate in the use of alcohol, tobacco, coffee and tea. Be moderate in sexual connection—do not suppress the desire; marry."

School Age.—At what age should a child be admitted to the public school? Funk, in *Jour. Med. Society, New Jersey*, Jan., 1910, p. 384, after consideration of the subject concludes that a child should not be admitted to school under seven years of age. The length of hours the first two years should be short. More time should be given to physical exercises than is done. There should be out-of-door games under systematic supervision. Older pupils should, in the spring and autumn and under supervision of the teachers, take walks in the country. Every child, on entering school, should be thoroughly examined as to physical condition by the medical inspector.

Berlin Medical School Inspection.—In a letter to *Jour. Amer. Med. Assn.*, Feb. 19, 1910, p. 628, appears the following report: There were for 1909 44 inspectors, 228,455 pupils; each physician had under inspection between 3,234 and 6,297 children; 10 per cent. of the children who reported at the school buildings were rejected, chiefly because of anemia, rickets and intellectual inferiority. About one-fifth of the children in the schools had to be kept under special supervision; 456 were placed in special classes for the weak-minded; 25 in an idiot asylum. From tuberculosis .7 per cent. suffered. A few epidemics required

suspension of classes for a time. The municipal laboratory examinations showed that in some cases the infectious germs could be removed from the schoolrooms only by very thorough disinfection. One-fourth of all the children showed spinal curvature. The city spent $20,000 for meals at school, 835,000 lunches in the children's diet kitchen.

Posture; Its Relation to Human Efficiency and the Influence of Poise on the Support and Function of the Viscera.—Goldthwait, in *Bost. Med. and Surg. Jour.*, Dec. 9, 1909, p. 839, has a long article on this subject, illustrated. Well worth reading.

Medical Antagonisms.—F. L. Biscoe, of Washington, has an article on this subject in the *Virginia Med. Semi-Monthly*, Jan. 21, 1910, p. 477. It was read before the Clinical Society, D. C., Nov. 15, 1909.

Ambroise Paré and His Times.—Dr. Truman Abbe treats this subject in *Old Dominion Jour. Med. and Surg.*, Feb., 1910, p. 79; paper read before the Med. History Club of Washington.

Last Illness of King Charles the Second.—The obscurity that existed in regard to the case led Dr. Raymond Crawfurd to make research and publish an account of it in book form. He concludes from his research that the king died from granular kidney. A notice of the book appeared in the *Brit. Med. Jour.*, Nov. 27, 1909, p. 1536.

Death from Ether.—Lathrop, in *N. Y. Med. Jour.*, Dec. 25, 1909, p. 1288, reports a case; woman 41 years old; had umbilical hernia. She had asthma, cough and large fatty heart; was also very fat; urine normal. Respiration and heart action ceased simultaneously.

Stovaine and Strychnin Anesthesia.—Judd, in same journal, p. 1273, reports cases, and concludes that while in competent hands and in selected cases this form of anesthesia has its advantages over general anesthesia, its efficiency in general use is not convincing. Its dangers exceed those of the older methods.

An editorial in *Bost. Med. and Surg. Jour.*, Dec. 16, 1909, p. 900, concludes that Jonnesco's spinal anesthesia must have a limited space in surgical practice, especially in view of its dangers.

An editorial in *N. Y. Med. Jour.*, Dec. 25, 1909, p. 1277, concludes that while Jonnesco's great skill in technique is conceded, and also his exceptional judgment in adjusting the doses of stovain and strychnin, the entire testimony so far condemns the

method as a routine practice, though under certain special conditions it is useful.

Moorhead, in *Jour. A. M. A.*, Jan. 22, 1910, p. 281, sums up the dangers in Jonnesco's method. Danger of interference with a highly organized section of the nervous system, considering the possibility of a puncture of bloodvessels, leading to spinal hemorrhage and areas of spinal sclerosis, or later, syringomyelia. Uncertainty of reaching the arachnoid space, and hence failure of analgesia. Psychic shock incident to operations where patients are conscious and appreciative of the sights and sounds occasioned by the occurrence. The advantages do not outweigh the dangers, known and unknown, in a yet insufficiently tried radical departure from older methods. Moorhead adds that Jonnesco's method must always have a limited application that is best represented by emergency or battlefield operations, and should not be used except when there are marked contraindications to either inhalation or local anesthesia.

Jonnesco himself, in *Brit. Med. Jour.*, Nov. 13, 1909, p. 1400, states that the arachnoid may be punctured at any level. To the anesthetic, whether stovain, tropacocain or novocain, strychnin should be added. The puncture is harmless, and there is no fear of pricking the spinal cord ; if it is pricked it does no harm. The puncture should be between the first and second thoracic, or the last thoracic and first lumbar, vertebrae. The addition of neutral strychnin sulphate preserves the full antiseptic power of the anesthetic solution and neutralizes its injurious action on the bulb (*i. e.*, oblongata). There is no need to sterilize the solution ; this might destroy its properties. The water used to make the solution should be sterilized, but not distilled. One ccm. of the solution should be used. The technique is simple : a Pravaz syringe and the usual needle for lumbar puncture. There are no contraindications. The operation is safe, never causes death nor any complications, early or late.

Serums ; Increase in their Hemolytic Power.—Embleton and Shaw, in *Brit. Med. Jour.*, Oct. 30, 1909, p. 1268. They consider the increase in power resulting from the experimental introduction of organ extracts derived from other animals of the same species.

Bacterial Vaccines ; their Therapeutic Use.—Hoobler, in *Amer. Jour. Med. Sci.*, Jan., 1910, p. 39, concludes that if properly used, bacterial vaccines do no harm. Autogenous vaccines should be used when possible ; stock vaccines are uncertain. Chronic infections yield more rapidly than acute; local processes better than general. If the vaccine will be of service its results should appear in a week or ten days.

X-Ray Work.—Gray, in *Old Dominion Jour. Med. and Surg.*, Feb., 1910, p. 108, states that the x-ray is of great value in the treatment of selected cases. In the usual forms of goiter it shrinks the glands, thickens the capsule and ameliorates the nervous symptoms. In non-malignant diseases of the skin in which the epithelium is involved the ray gives good results, but is of little or no benefit where the connective tissues are involved. In tuberculous adenitis the ray causes a rapid breaking down of the glands in which the formation of pus has begun, and will generally cause a prompt disappearance of the glands that are treated before pus formation. In localized lupus we may expect a cure; little or no benefit in lupus erythematosus.

Antipyrin, Acetanilid and Phenacetin; are they Harmful Remedies, are they Habit-forming Drugs?—Dr. U. S. Boone, of St. Louis. A pamphlet with this title has been published by Dr. Boone, dedicated to the medical profession of the United States. He states that in order to get at the truth of the matter stated as questions in the title, he addressed every hospital and sanatarium in the United States, asking eighteen questions, among which were: How many cases of poisoning by the drugs named have you treated? Have you treated any cases of *habitual use* of either drug? Did the patients have a *craving* for the drug? As a result he gives a long list of hospitals and sanatariums from which he received replies that they had had no cases of untoward results or of habit. He quotes at length from a number of these. The conclusion that he reaches is that the drugs are safe drugs to use, and that there has been much misrepresentation. Copies of his booklet can be obtained from him at 25 cents a copy; address 1803 Olive Street, St. Louis.

Venous Stasis as a Therapeutic Measure.—Bonner, in *Amer. Jour. Surgery*, Feb., 1910, p. 53, states that the length of time that Bier's hyperemia has been employed places it beyond the experimental stage; it must be accepted as a standard therapeutic measure. The treatment is founded on scientific principles. The materials used are readily obtained, and the cost is nominal. The technic requires skill and care, but may be acquired by diligent application. The treatment may extend over a long time, but after a time may be left in the hands of the patient himself, with proper instruction and with periodical supervision by the physician. The beneficial effects of treatment can be measured early in the use. It greatly decreases the liability to ankylosis.

Cervical Ribs.—Francine, in *Amer. Jour. Med. Sci.*, Jan., 1910, p. 108, reports four cases.

Runner's Cramp.—Asst. Surg. Schmidt, U. S. Navy, reports a case in *U. S. Naval Bulletin*, Jan., 1910, p. 25. A midshipman; both feet affected; came on while running; in the habit of running about a mile and a half a day; extensor tendons affected. Treatment, rest.

Tubercle Bacilli in the Circulation.—Burvill-Holmes, in *Amer. Jour. Med. Sci.*, Jan., 1910, p. 99, has studied this subject, and sums it up in the statement that the bacilli do not constantly circulate in the blood of tuberculous patients, though occasionally present. Being very few in number, they are very difficult to find; in 50 cases studied he did not find them.

Early Diagnosis of Pulmonary Tuberculosis.—Butterfield, in *Illinois Med. Jour.*, Feb., 1910, p. 209, states that clinically the first stage may be demonstrated before bacilli appear in the sputum. Latent, closed or masked forms of the di-ease are not readily demonstrated, and tuberculin should be given for the purpose.

Emancipation from Tuberculosis.—T. Y. Hull, formerly of Washington, has an article on this subject in *Texas Med. Jour.*, Feb., 1910.

Typhoid Fever; Intestinal Perforations.—McGuire, in *N. Y. State Jour. Med.*, Dec., 1909, p. 505, states that early diagnosis of this accident is often so difficult that in doubtful cases exploration is the only safe procedure; rapid exploration causes little if any harm; the sooner that operation is done the greater the chance of recovery; the operation itself should be rapidly done; if there is advanced general peritonitis operation is useless, and brings discredit on surgery.

Granular and Barred Forms of Bacillus Diphtheria in Throat Cultures.—Schultz, in *Jour. Infect. Dis.*, Nov. 26, 1909, p. 610, says that the granular forms are increasing in frequency, while the barred forms have almost entirely disappeared.

Amebiasis.—Long, in *Calif. State Jour. Med.*, Feb., 1910, p. 49, states that this disease is endemic in California; disseminated by water and vegetables, such as water cress, celery, cabbage and lettuce; these being infected by the practice of sprinkling human fecal matter over vegetables and the soil for fertilization.

Amebic Dysentery; its Treatment.—Deeks and Shaw, in *Medical Record*, N. Y., Nov. 13, 1909, p. 806. They state that the longer that treatment is delayed the more grave is the prog-

nosis, and recommend a rest-supporting treatment consisting of rest in bed, with milk diet, mild irrigation, and bismuth subnitrate in heroic dose.

Diabetic Coma; Is it Due to Acidosis?—Stark, in *Medical Record*, N. Y., Nov. 13, 1909, p. 803, discusses this subject, and concludes that it is not.

Diabetes in Young Children.—Bovaird, *Amer. Jour. Obstet.*, Dec., 1909, reports a case in a child seven years old, and Kerley in another 16 months old. The latter died; the sequel in the former is not stated.

Actinomycosis in the Human Subject.—Stone, in *Virginia Med. Semi-Monthly*, Feb. 11, 1910, p. 489, reports two cases in farmers which were apparently cured.

Solid Edema; Lymphangioplasty.—Mitchell, in *Brit. Med. Jour.*, Nov. 20, 1909, p. 1462, reports a case, with recovery.

Mikulicz Disease (Symmetrical Lymphomata of Lachrymal and Salivary Glands).—Ziegler reports a case in *New York Med. Jour.*, Dec. 11, 1909, p. 1159; illustrated. He considers it as a disease *sui generis;* a true lymphoma, not adenoma. The course is chronic, but prognosis favorable, though there is a tendency to relapse.

Sporadic Edema of Legs Resembling Mulroy's Disease.—McClure, in *Northwest Medicine*, Feb., 1910, p. 58, reports a case; the only one in the family.

Henoch's Purpura.—Day, in *Brit. Med. Jour.*, Nov. 11, 1909, p. 1405, reports a case of this rare disease in a boy 5 years old. There was swelling and edema around the joints; purpura; abdominal colic; vomiting; edema of lax tissues; hemorrhages, especially into lungs and from bowels; slight hematemesis; large quantities of phosphates in urine and albuminuria. A grandmother and maternal aunt had also had purpura. The child recovered.

Vincent's Angina.—Asst. Surg. Whiteside, U. S. Navy, in *U. S. Naval Bull.*, Jan., 1910, p. 56, reports the case. Smears taken from the patches showed large fusiform bacilli and many spirochaetes. Had had two previous attacks. Recovered.

Ophthalmia Neonatorum; its Preventive Treatment.—Moran and Sprigg, in *Amer. Jour. Obstet.*, Feb., 1910, report on this subject as a committee of the Washington Obstet. and Gy-

necol. Society. The report is a résumé of replies received from forty hospitals in this country and abroad, all of which use prophylaxis but differ in the drugs used, strength of solutions, technic, etc. The committee recommends that immediately after the birth of the infant the eyes should be carefully wiped with sterile gauze dipped in a saturated solution of boric acid and then a 5 per cent. solution of sophol or 25 to 50 per cent. argyrol or 10 to 20 per cent. protargol be used as prophylactic. The nurse should thoroughly wash her hands with soap and water and disinfect them before washing the eyes of the infant, or dressing the navel or bathing the mother. The mother's hands should also be cleansed several times a day and particular attention given to her nails, and she should also be warned of the danger of the lochia. The prophylactic solution should be dispensed in amber-colored sterile tubes sealed with paraffin, for use of midwives; a little sterile gauze in the package. Proper instructions as to technic should appear on birth certificates. The Health Dept. should furnish the drugs gratuitously in indigent cases. There should be legislation for the control of midwives, who should be compelled to make report of births within 24 hours after delivery and should be required to summon a physician or notify the Health Dept. when a case of ophthalmia appears.

Recovery of Vision in an Amblyopic Eye after 4.5 Years of Blindness; A Contribution to the Question of Amblyopia ex Anopsia.—Harris, in *Penna. Med. Jour.*, Feb., 1910, p. 319, reports the case; boy 7½ years old.

Facial Spasm and Tic Torticollis; Diagnosis and Treatment.—Tom A. Williams, in *Medical Press and Circular*, London, Jan. 26, 1910, p. 84, considers this subject. Also, in *Monthly Cyclop. and Med. Bull.*, Jan., 1910, p. 5.

Influenzal Meningitis.—Hymanson, in *New York Med. Jour.*, Dec. 25, 1909, p. 1268, reports two cases in children; both died.

Anterior Poliomyelitis; Deformity from, with Operations and Relief.—Fassett, in *Northwest Medicine*, Feb., 1910, p. 56, reports five cases; with illustrations.

Epilepsy; the Home Treatment Contrasted with Institutional.—Woods, in *Penna. Med. Jour.*, Feb., 1910, p. 344, has an article on this subject; he believes that cases do better at home than in institutions for epileptics.

Epilepsy and Menstruation.—Gordon, in *Penna. Med. Jour.*, Feb., 1910, p. 347, reports upon 23 cases. He finds an undeniable relation between epileptic seizures and menstruation. An

absolute freedom from attacks in the intermenstrual intervals. Inability to control the fits with the usual bromid treatment. The excellent effect of thyroid extract. He gives the extract in the intervals of menstruation; bromids without the extract for a few days before menstruation.

Tetanus Treated with Antitoxins.—Hamilton, in *Jour. Nat. Med. Assn.*, Jan.–March, 1910, p. 59, reports a case, in a man who was shot. The wound healed but tetanus developed. Antitetanic serum was given by injection several times, and he gradually recovered. Hamilton recommends that in order to prevent tetanus occurring, the wound should be freely incised; all foreign matter should be carefully and thoroughly removed from the wound, which should then be cauterized with a 25 per cent. solution of carbolic acid; apply a loose wet boric pack; inject subcutaneously 1,500 units of antitetanic serum. In no case should the wound be closed; it should be allowed to heal by granulation. The dressing and packing should be renewed every day.

Tetanus Antitoxin; Commercial Preparations.—Anderson, in *Jour. A. M. A.*, Jan. 22, 1910, p. 253, states that the benefit of the Federal control of therapeutic serums may be summarized as follows: The physician can be assured that every package of tetanus antitoxin now contains at least the number of units claimed. All serums are now examined for, and are required to be free from, bacterial or toxic contamination. The amount of preservative contained in the serums is not excessive. There has been a progressive increase in the potency of tetanus antitoxin without a corresponding increase in cost. A uniform standard having been established, definite amounts of tetanus antitoxin can be used, so that data will be gradually collected as to the amount of serum necessary to be used for immunizing and curative purposes.

Traumatic Cavity in Spinal Cord.—Dillon, in *California State Jour. Med.*, Jan., 1910, p. 22, reports a case in which there was no fracture or dislocation of the vertebrae. The man fell from a car and was paralyzed. He died next day. Examination of the cord showed a slight depression posteriorly at about the 5th and 6th cervical segments; on section here there was a cavity in the central gray about the size of a small bean, rather vertical and more on the right than the left. The report does not state what the cavity contained.

Insanity; Traumatism as a Causative Factor.—Hinton, in *Illinois Med. Jour.*, Feb., 1910, p. 259, states that traumatism is a predisposing but not an exciting cause. The pathology of cer-

ebral trauma, whether recent or remote, is not characteristic of any form of mental disease. Similar changes are often noted in different forms of insanity. If paresis follows an accident, it is usually the result of some cause acting upon a process that has existed for some time. Organic dementias are permanent. Injuries of other parts of the body are less important as to psychosis than injuries of the head.

Hysteria; Its Essential Character.—Tom A. Williams, of Washington, in *West Virginia Med. Jour.*, Jan., 1910, p. 239, considers this subject.

Juvenile General Paralysis.—Hough, in *Jour. Nerv. and Ment. Dis.*, Oct., 1909, reports the case, a patient in the Govt. Hosp. Insane, Washington. A girl 17 years old. It ended fatally. A careful post-mortem examination was made and also a microscopical one. The case was typical, both clinically and pathologically, as well as because of the presence of the double nucleated Purkinje cells and the calcification of cerebellar arteries.

Pellagra.—Drewry, in *Old Dominion Jour. Med. and Surg.*, Feb., 1910, p. 98, considers this subject. As Superintendent of the Central State Hospital at Petersburg, Va., he states that there have been 21 cases in that hospital, all in colored persons 20 to 60 years of age; nine cases died of physical exhaustion and mental disintegration.

Hyde, in *Amer. Jour. Med. Sci.*, Jan., 1910, pp. 1 to 26, discusses the subject. The article is well illustrated.

Lavinder, in *Virginia Med. Semi-Monthly*, Jan. 21, 1910, p. 468, says that in this disease there is a fairly constant secondary anemia, not usually severe, with corresponding changes in the red blood cells. Leucocytosis is rare. Nothing like a protozoon so far reported. Blood uniformly sterile; Tizzoni's microörganism not isolated.

Wasserman Reaction in Pellagra.—Fox, in *New York Med. Jour.*, Dec. 18, 1909, p. 1208, reports 30 cases and concludes that cases of pellagra do not often give a positive Wasserman reaction, and a positive reaction, when obtained, is generally weak and is easily distinguished from the strong reaction in syphilis and many cases of leprosy.

Squirrel Plague in Man.—McCoy and Wherry, in *Jour. Infect. Dis.*, Nov. 26, 1909, p. 670, report the case, and state that it is the first case that has come to autopsy in America. The lesions are similar to those in subacute plague in guinea pigs, rats and squirrels.

Cobra Venom; Resistance of Human Erythrocytes.—Weil, in same journal, p. 688, considers this subject; based on 191 cases.

Cancer; Treatment with the Body Fluids of a Recovered Case.—Hodenpyl, in *Med. Record*, N. Y., Feb. 26, 1910, p. 359, presents a preliminary communication. One case recovered after the liver had become involved. The ascitic fluid from the case was used in 47 other cases by injection into the tumors. The results were the gradual disappearance of tumors, with partial replacement by connective tissue; and the tumors seemed to be the only parts of the body affected. A full report will be made later.

Cancer; Death Rate in United States.—Edwards, in *Med. Record*, N. Y., Dec. 18, 1909, p. 1030, considers this subject statistically, and concludes that it seems safe to assume that the mortality from cancer has been increasing in the United States during the last twenty-five years.

In glandular and other forms of carcinoma while yet superficial we may get a favorable response, but when deeply involved little can be expected. All radical operations for cancer of the breast should be followed by a series of x-ray exposures, repeated twice or oftener within the first two years after the operation. Epithelioma, if confined to the skin and superficial tissues, will always respond to the ray unless the patient lacks reparative power. Those that affect the mucous membranes are likely to be more obstinate. Vigorous and long-continued treatment may cure a sarcoma.

Hemoptysis Cured by Injection of Normal Serum.—Dewar, in *Brit. Med. Jour.*, Dec. 11, 1909, p. 1664, reports a case of hemoptysis that resisted rest in bed in a cool room, the patient not allowed to speak, icebag over the tuberculous cavity, cold packs to abdomen, hot bottles to feet, calomel and castor oil, morphin and atropin hypodermically, inhalations of amyl nitrite, hypodermics of ergotinin, calcium chloride by mouth and rectum, suprarenal gland, and normal serum by mouth three times a day. The hemorrhage lasted sixteen days. Finally 20 ccm. were injected into radial vein and the bleeding ceased almost at once, though afterwards he had "serum disease."

The Bundle of His.—Curran, in *The Anatomical Record*, Dec., 1909, p. 618, has an article on a constant bursa in relation with this bundle, and reports studies of the auricular connections of the bundle. He looks on the bursa as a lubricating mechanism, and therefore there is a danger of bursitis, with resulting cardiac

symptoms. He thinks that the presence of the bursa proves that either the bundle does not contract at all or that it contracts in a different way from that of the ventricle.

Adams-Stokes Disease.—Bishop, in *Amer. Jour. Med. Sci.*, Jan., 1910, p. 62, reports a case in which a calcareous nodule was found in the bundle of His.

Heart Disease; Clinical Study of 600 Cases.—Hall, in *Med. Record*, N. Y., Nov. 13, 1909, p. 816. See original paper.

Teratoma of Soft Palate.—Coffin, *Jour. Med. Soc. New Jersey*, Jan., 1910, p. 397, reports the case; in a woman 66 years old. The tumor was attached to the soft palate, behind and above the uvula, hanging free in the pharynx.

Diseased Tonsils; their Pathological Significance.—Townsend, in *Jour. S. C. Med. Assn.*, Dec., 1909, p. 532, states that the defensive action of the tonsils, if they have any, is easily overcome, especially in childhood. The public should be taught that enlarged tonsils are often the site of tubercular infection. This infection occurs oftenest in a submerged tonsil that has slight evidence of disease. The tonsils may be the means of the introduction of tubercle bacilli into the blood. Infectious disease is rare in those animals that do not have tonsillar tissue. An enlarged tonsil is to all intents and purposes nearly always a diseased tonsil. Generally speaking, a tonsil that can be seen is diseased.

Enlarged Tonsils; Resume of 850 Operations.—J. J. Richardson, of Washington, in *Virginia Med. Semi-Monthly*, Dec., 24, 1909, p. 423, considers this subject in its clinical aspects. Those interested should see the original article.

Mouth Diseases and Systemic Diseases; their Relation.—Allyn, in *Penna. Med. Jour.*, Feb., 1910, p. 330, states that many persons poison their food before it reaches their stomachs. A foul mouth is a culture medium for pathogenic bacteria; and the mouth and teeth should, therefore be inspected, both in the prevention of disease and in its diagnosis and cure. The gums and teeth may be valuable indicators of serious nutritional disturbance. Once a gingivitis has started the absorbent surfaces become avenues of secondary infections.

Eggs; Chemical and Bacteriological Study.—Pennington, in *Jour. Biol. Chem.*, Jan., 1910, has a long article on this subject. He finds that organisms are usually to be found in both white

and yolk. Eggs laid in September and October contained more organisms than those laid in the early spring. About the same number in fertilized and unfertilized. The eggs were all fresh. A long list of organisms is given, none of them pathogenic.

Carbohydrates and the Digestion of Casein.—Goldthwaite, in same journal, p. 69, concludes from experiments that the addition of carbohydrates to the digestion-solution retards digestion in proportion to the amount of added carbohydrate.

Catsup.—Wesener, in *Illinois Med. Jour.*, Feb., 1910, p. 151, states that benzoate is less active than the preservatives that are now used in making pure food catsup. The benzoate and benzoic acid do not destroy the flavor and do not disguise an inferiority in the article preserved. The flavor produced by vinegar and spices is wholly artificial, does not retain much of the natural flavor, and it is easy by using them to cover up inferiority and deceive the consumer.

Hydrogen Peroxide; its Influence on Secretion of Hydrochloric Acid.—Goodman, in *Penna. Med. Jour.*, Feb., 1910, p. 342, states that hydrogen peroxide is a remedy in hyperchlorhydria, but must be used in conjunction with other means of treatment.

Hyperchlorhydria; a Study.—Piersol, in same journal, p. 337, states that hyperacidity occurs as often as a primary gastric neurosis as a symptom of some underlying organic lesion. Hyperchlorhydria proper is usually met with between 10 and 30 years of age, oftener in men than women; usually in those who live under mental strain. Careless habits of eating, the use of coffee, alcohol, and especially tobacco, predispose to its recurrence. The symptoms vary; the gastric symptoms, usually regarded as characteristic, are not constant enough to be of definite diagnostic value. Digestive power in hyperchlorhydria is good; even starch is well digested; retention occurs in less than 20 per cent. of the cases. Occult blood rarely occurs in the feces; the stools seldom show evidence of poor meat or starch digestion. Specific gravity of urine normal, its acidity decided; in about 50 per cent. of cases there is a normal quantity or moderate excess of indican. Usually anemia is absent.

Regurgitant Vomiting due to Adhesions after Gastro-enterostomy with Pyloric Exclusion.—Myer, in *Jour. Missouri State Med. Assn.*, Dec., 1909, p. 346. He concludes the report of the case with the statement that the use of the Murphy button is not always safe even where the pylorus is excluded; the opening may close and sometimes does.

Perforating Ulcer of Stomach.—Maclaren, in *Brit. Med. Jour.*, Nov. 6, 1909, p. 1343, states that he recognizes the position of the ulcer when the abdomen is opened by the bright red coloring on the peritoneum and the patch of lymph.

Fecal Bacteria in Healthy Men.—MacNeal, Latzer and Kerr have a long paper in *Jour. Infect. Dis.*, Nov. 26, 1909, pp. 571 to 609.

Intestinal Obstruction from Traumatic Rupture of Blood-vessel.—Stewart, in *Brit. Med. Jour.*, Nov. 20, 1909, p. 1463, reports a case. The patient died.

Hemorrhoids; the After Results.—Anderson, in *Brit. Med. Jour.*, Oct. 30, 1909, p. 1277, gives the results of a study of 300 cases. A good article. Those interested should see the original.

Tapeworms.—Pfender, in *Texas Med. Jour.*, Feb., 1910, p. 293, discusses the economic importance of the most common tapeworm in man in the United States. He tabulates the cases reported, and finds 76 cases of the beefworm, the *taenia saginata;* 38 of the broad worm, *dibothriocephalus latus;* 30 of the dwarf worm, *hymenolepis nana;* and only 2, those doubtful, of the pork worm, *taenia solium.* He also discusses the symptoms and treatment, and reports two cases.

Cholelithiasis Simulating Duodenal Ulcer.—Weinstein and Cronson, in *N. Y. Med. Jour.*, Nov. 6, 1909, p. 900, report the case.

Pancreas; Acute Necrosis; Sudden Death.—Shaw, in *Brit. Med. Jour.*, Oct. 30, 1909, p. 1279, reports the case, which was interesting, both from a medico-legal and scientific point of view. Nearly all the cases occur in the male sex; about 41 altogether have been reported.

Chronic Forms of Pancreatitis.—Robson, in *Annals of Med. Practice*, Dec., 1909, p. 406, states that of 102 operations in cases in which chronic pancreatitis was the principal disease or was a serious complication of some other disease 96.1 per cent. were followed by recovery; mortality, 3.9 per cent.

In 55 cases of catarrhal interstitial pancreatitis, where gallstones obstructed the common bile duct, choledochotomy was done in 42 cases, cholecystotomy in 9, cholecystenterostomy in 4; 48 recovered and were well when last heard from.

In 46 cases of interstitial pancreatitis without gallstones or other removable cause the bile ducts and, indirectly, pancreatic

ducts were drained ; 6 were not again heard from ; of the remaining 39, all except one, recovered and continued in good health.

In most cases, therefore, the removal of the cause, with drainage, or, if the cause is not removable, simple drainage, can be recommended.

Appendicitis ; the First Operation for its Cure.—Cumston, in *Bost. Med. and Surg. Jour.*, Dec. 16, 1909, p. 909, states that the first operation was done by Dr. W. W. Grant, of Denver, Colorado, January 4, 1885. The patient is still living. Dr. Grant did not, however, do an appendectomy ; this was first done by Kroenlein in 1884.

The Appendix ; a Study of 440 Operations.—Ill, in *Amer. Jour. Obstet.*, Nov., 1909, p. 863. Those interested should see the original paper.

Chylous Cyst of Mesentery.—Congdon, in same journal, p. 754. reports the case.

Gonorrheal Epididymitis ; Operative Treatment.—F. R. Hagner, of Washington, in *Med. Record*, N. Y., Dec. 4, 1909, p. 944, considers this subject and reports cases. Pain was relieved in 33 of 34 cases by operative treatment ; the induration was reduced. The testicle did not become involved. Convalescence was rapid.

The Wasserman Reaction.—Kaplan, in *Amer. Jour. Med. Sci.*, Jan., 1910, pp. 82–99, has an article on this subject.

Hypertrophied Prostate.—Niles, in *Virginia Med. Semi-Monthly*, Dec. 24, 1909, p. 417, concludes that inflammation is the cause of the lesion ; that in some cases acute engorgement of the prostate may be prevented by prophylaxis, and thus the permanent retention of urine may be prevented ; and that many cases may be treated by mechanical means.

Prostate Gland ; Cancer.—Young, in *Annals of Surgery*, Dec., 1909, pp. 1144–1233, concludes from a study of 111 cases that cancer of the prostate is more frequent than is usually supposed; occurs in about 20 per cent. of cases of prostatic enlargement. In 500 cases of prostatic obstruction 100 were cancerous and 400 benign hypertrophies. Cancer of prostate generally causes the same symptoms as prostatic hypertrophy; but later pain is a prominent symptom. A case of hypertrophy may become the seat of cancer, but usually it is in some part not hypertrophied, generally in the posterior subcapsular stratum behind the hyper-

trophied lateral lobes. The disease remains a long time in the confines of the lobes; when it extends it is nearly always along the ejaculatory ducts, thence to the trigone and the lymphatics leading towards the lateral walls of the pelvis; involvement of the glands occurs late; sometimes the disease appears secondarily in bone before affecting the glands. A nodule in the prostate in a man past 45 should be viewed with suspicion, especially if there is no chronic prostatitis and no intravesical hypertrophied lobes.

Enlargement of Prostate.—Bryan, in *W. Va. Med. Jour.*, Jan., 1910, p. 233, states that prostatic hypertrophy is present in 20 per cent. of men over 55 years of age; 10 per cent. of them require operation. The operation of choice is perineal prostatectomy; in selected cases the suprapubic. In spite of the age the mortality is less than that for appendicitis or even catheterism. There should be a two weeks' preparation, in view of the coincident thickened arteries, tired heart and confused (?) kidneys. Age is not a contraindication. In desperate cases the bladder should be drained and reaction should be waited for, the centers should be established (?); then, if all is favorable, the radical operation, prostatectomy, should be proceeded with. No case is too desperate for drainage. Wash out with water, not drugs; the use of spartein sulphate is not to be encouraged. The after treatment is the same as for other major operations. After operation do not be in a hurry to get the patient up; let him rest.

New Tests for Albumin in Urine.—Oguro, in *Zeit. f. Exp. Path. u. Therap.*, 1909, p. 349 (see *Amer. Jour. Med. Sci.*, Jan., 1910, p. 128), presents two new qualitative tests. One is the use of iodin and sodium bisulphate; the other is the decolorized tincture of iodin. Those interested in the details should see the American journal or the original.

Urinary Diseases; Use of Colon and Streptococci Vaccines.—Grosse, in *Calif. State Jour. Med.*, Feb., 1910, p. 41, states that autogenous vaccines have a definite place as therapeutic agents in urinary diseases. Such vaccines should be prepared by a proficient bacteriologist, and a well equipped laboratory should be conjoined with treatment rooms. Fresh vaccines are necessary; they deteriorate more rapidly than is generally supposed. Cases of enlarged prostate, with infected bladder, in which a fair-sized nelaton catheter readily enters the bladder, should not be operated on until vaccines have been given a trial. In infected and encapsulated organs, or where chronic inflammatory infiltrates surround the infected areas, vaccines should be supplemented by the Bier treatment to enhance the blood supply.

Epinephrin.—Schultz, in Bull. No. 61, Hygienic Laboratory, Jan., 1910, made quantitative pharmacological studies as to the relative physiological activity of some commercial solutions of epinephrin, and concluded that only about half of those on the market have the standard activity. Some preparations are worthless as medicines and perhaps even dangerous. Some quickly deteriorate after opening the package. Some are of excellent quality.

Ovarian Cyst in Girl 14 Years Old.—Matthews, in *Northwest Medicine*, Jan., 1910, p. 15, reports the case. The cyst was about the size of a canteloup and its pedicle was twisted. It was removed and the patient recovered.

Pyosalpinx; Rupture into Abdominal Cavity.—Bonney, in *Jour. Med. Soc. New Jersey*, Feb., 1910, p. 442, says that spontaneous rupture is very rare; the sooner the diagnosis is made and operation done the better; the mortality is 30 per cent., even when operated on within twelve hours after rupture.

Pubiotomy.—Boyd, in *Penna. Med. Jour.*, Jan., 1910, p. 249, says that pubiotomy is not a difficult operation; if done by a competent operator the maternal mortality should not be over 2 per cent. It is contraindicated in pelves of great contraction. Will replace high forceps, version and craniotomy. Should be reserved for experts and those with large hospital experience. Should not be done in cases of infection or after failure to deliver by other methods. Should always be considered a primary operation, with danger of hemorrhage, extensive tears and infection.

Caesarean Sections; a Study of the First Series of 100 Cases Done at Boston Lying-in Hospital, Boston.—A symposium in *Bost. Med. and Surg. Jour.*, Dec. 2, 1909, p. 803. A good article.

Vaginal Caesarean Section.—W. M. Sprigg, of Washington, in *Jour. Med. Soc. New Jersey*, Feb., 1910, p. 451; from *Amer. Jour. Obstet.*, Oct., 1909.

Ovarian Pregnancy at Term.—Kirchner, in *Amer. Jour. Obstet.*, Nov., 1909, p. 853, reports the case; mother and child recovered.

Puerperal Uterus, its Involution.—With Special Reference to the Involution of its Circulatory System. Goodall, in *Amer. Jour. Obstet.*, Dec., 1909, p. 921, has an article of 60 pages on this subject.

Rupture of Uterus During Labor; a Study of Cases.—Lobenstine, in *Amer. Jour. Obstet.*, Nov., 1909, p. 819, has an interesting article with bibliography.

Spontaneous Rupture of Pregnant Uterus at Seven Months.—Mooney, in *Jour. Med. Soc. New Jersey*, Jan., 1910, p. 396, reports the case; one of abdominal gestation. Celiotomy was done and hysterectomy. Recovery in three weeks.

Blood Pressure in Surgery.—Cohen, in *Colorado Medicine*, Feb., 1910, p. 49, states that when blood pressure is properly used it is more accurate than a pulse observation as usually made. Every surgeon should be familiar with the use of some good instrument. There should be more routine determinations of blood pressure, correctly interpreted, before this procedure finds its limitations and proper place in surgery. Experimentally it has been and will be of great value in determining the proper treatment of many surgical conditions, such as shock, hemorrhage, etc. Practically it is not only a valuable diagnostic aid but of much help in operating on selected cases.

Treatment of Suppurative Sinuses and Fistulas.—L. H. Reichelderfer, of Washington, D. C., has an article on this subject, that was read before the Medical and Surgical Society of Washington, Dec. 2, 1909.

Rupture of both Quadriceps Extensor Cruris Tendons.—Chichester, in *Brit. Med. Jour.*, Nov., 6, 1909, p. 1343, reports the case; the man, age 64, recovered.

Heart; Shot Wound; Recovery.—Teass, in *Calif. State Jour. Med.*, Feb., 1910, p. 52, reports the case. For details see the original.

Heart Massage in Surgery.—C. S. White, of Washington, in *Jour. Med. Soc., New Jersey*, Feb., 1910; from *Surgery, Gynec. and Obstet.*, Oct., 1909.

Abdominal Surgery; Practical Points.—Morris, in *Jour. Missouri State Med. Assn.*, Feb., 1910, p. 482, emphasizes the following points: Proper attention to sterilizing the alimentary canal before doing abdominal section; estimating percentage of urea excreted before giving anesthetic. He also calls attention to the importance of isolating the character of the bacteria in cases of post-operative infection.

Embryo Abdominal Surgeons.—Carstens, in *Amer. Jour. Obstet.*, Nov., 1909, p. 757. He says that abdominal surgery by embryo surgeons should be prohibited; thorough preparation in a proper hospital as assistant for one year should be a minimum requirement; of course, this does not apply to emergencies.

Hernia; its Etiology and Relation to the Earning Capacity of the Individual.—Wood, in *Monthly Cyclop. and Med. Bull.*, Jan., 1910, p. 20, states that the true predisposing cause of hernia is the congenital origin of the sac. A truss never cures a hernia in adult life, and rarely during childhood; its routine use is therefore to be condemned. The proper way to reduce the great loss caused by disability and the mortality incident to hernia is to correct the condition as soon as possible after its appearance by a properly performed operation.

Knee-joint; Traumatic Affections.—Hazen, in *Med. Record*, N. Y., Feb., 26, 1910, p. 350. His conclusions are that the joint is peculiarly predisposed to injury. Twists are far more likely to cause prolonged or recurrent disability than direct injuries. The degree of damage to the joint is not dependent on the severity of the trauma. The synovial structures are usually the seat of the disability. The injured parts are usually amenable to relief by operation. Exploratory incision is proper in obscure cases.

Patella Injuries and their Surgical Treatment.—Mitchell, in *N. Y. State Jour. Med.*, Feb., 1910, p. 76, states that suture of the patella with wire or chromatized catgut is now generally accepted as justifiable. Thorough asepsis should be used to prevent suppuration in the joint cavity. The transverse incision directly across the joint between the inner and outer aspect, at or close to the line of fracture, permits the most extended examination of the joint cavity, affords the best opportunity to repair lateral lacerations of the capsule and a better opportunity to remove anything that might get between the fragments. It is well to seal the wound, if possible, without drainage, and to begin passive motion early.

Convalescing Victim of an Auto Accident.—"I woke up and found the hot Welsh rarebit. I recognized it as my wife's cooking, but it was better seasoned than the average."

Nurse—"Merciful saints! we couldn't imagine what had become of that other mustard plaster."—*Judge.*

Book Reviews.

The Prevention and Treatment of Abortion. Frederick J. Taussig, A. B., M. D. C. V. Moseby & Co., St. Louis; 170 pages; 1910. Price $2.00.—In this modest volume the whole subject pertaining to abortion is carefully and lucidly brought forward, and the book is a valuable guide for the general practitioner. The specialist, however, will find some cause for disappointment.

In the treatment of habitual abortion due to a retrodisplaced and adherent uterus pessaries are recommended, and no good word is said for the cure by surgical intervention. Under the head of "Therapeutic Abortion" emptying the uterus is advocated in cases of an incarcerated pregnant uterus, although the author recognizes that the operation may be difficult to accomplish on account of the unusually high position of the cervix. Even if abortion be successfully performed in these cases danger is incurred from poor drainage, and repetitions of the abortion may be required by subsequent pregnancies. Laparotomy and reposition of the organ will not only cure the displacement, but give good hope for continuation of this and other pregnancies.

In treating severe sepsis no caution is given against the use of the curette in cases of streptococcic infection.

In hyperemesis a classification is accepted between the non-toxic and toxic forms; and in the former it is stated that "we are practically never justified in inducing an abortion." This advice, with the endorsement of the opinion that the toxic variety can be recognized by urinary changes, is dangerous teaching. The percentage of the ammonia coefficient is unreliable as an index. Some women will die from hyperemesis with an output of only 6 per cent. of ammonia coefficient, and others will get well with 30 or 40 per cent.

In performing therapeutic abortion it is preferable to empty the uterus by operation at one sitting, no matter what period of gestation is reached, and not, as the author recommends, by dilating with gauze in the first three months, and by rupturing the bag of waters or by the use of rubber bags from the fourth to the sixth month.

However, this little work is addressed primarily to the general practitioner, to whom falls the responsibility of treating the majority of the cases of abortion. As such it fills a space on the shelf of obstetric literature that is now occupied only by such brief treatment of the subject as one finds in the general text books of obstetrics.

The complete consideration of the subject is fully justified by the fact that abortion is so often mismanaged and that death or

invalidism is the result. The differentiation between abortion and miscarriage is ignored, and abortion is defined as "a previable expulsion of the human ovum." The practical objection to such a classification is overcome by the recognition and careful description of the course pursued and the treatment necessary before and after placental development.

On the whole, the book can be recommended to the general practitioner, and ought to be placed in his library for study and consultation. H. D. FRY.

"SPONDYLOTHERAPY," by ALBERT ABRAMS, A. M., M. D., F. R. M. S. (PHILOPOLIS PRESS, San Francisco), is a book of 400 pages, profusely illustrated with photographs and charts, in which the author considers a large number of pathological conditions in their relation to the spinal column and cord, with various therapeutic measures applied to the latter region which have been found efficacious in these conditions, and the anatomical basis for such treatment.

The chapters on diagnosis and treatment of diseases of the cord and column show acquaintance with the recent literature on the subject, and the points in differential diagnosis and treatment are clearly and concisely brought out. The same is true of his chapter on the diagnosis and spondylotherapy of various referred symptoms simulating pathological conditions of various organs.

Not so clear or convincing are the chapters on the treatment of various pathological conditions of the respiratory, circulatory and digestive systems, in which the marked effects obtained by concussion and similar therapeutic measures directed to the vertebral spines at the levels of exits of certain spinal nerves, suggest an enthusiasm on the author's part which would make this form of treatment a panacea.

Because of the extent of the field covered, the consideration of most of the subjects is necessarily brief and sketchy, but the point of view is novel and often suggestive of more work which might well be done in this direction. W. G. ERVING.

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VASO-MOTOR DISTURBANCES OF THE UPPER AIR TRACT.*

By C. W. RICHARDSON, M. D.,

Washington, D. C.

The turbinal bodies of the nasal cavity are such a highly-sensitive tissue that they readily reflect the disturbances within any of the great systems or organs of the body. The above fact is so imperfectly appreciated by the average rhinologist, and apparently so thoroughly unrecognized by the general practitioner, that it seems timely to call attention to these disturbances, and attempt to bring forward the fact that the local manifestations are only symptoms, reflex, to be sure, of some derangement in other systems or organs. It is not my purpose, in treating of this subject, to take up the consideration of those various systems and organs of the body which are well known to have as correlated symptoms some disarrangement of the mucosa of the upper air tract, but rather to call your attention to the subtle influences that certain conditions, unattended with any demonstrable organic change, exert over the mucous membranes of the nose, the throat, and even the bronchial mucous tract. The system or organ which is calling into active play the vaso-motor disturbance may not be so manifest in its symptomatology as to direct attention to its perverted activity; or the vaso-motor condition may be so pronounced in its disturbance of the general well-being as to lead to the thought that it is the primary condition, and that other manifestations noted are but secondary to its enervating activity. It is only through careful examination of the local

* Read before the Medical Society, March 30, 1910

conditions and the thorough elimination of any actual structural organic change within the turbinal tissues or diseases of the communicating cavities, that a possible reflex origin can be considered as the probable etiological factor in the vaso-motor disturbance manifested in any given case. If the case can be considered as an extra-nasal type of vaso-motor catarrh it then becomes the duty of the practitioner to carefully survey the various systems and organs of the body in the light of the symptoms manifested, in order to ascertain the seat of the disturbance and initiate the treatment essential to correct it and remove thereby the reflex bringing about the local nasal disturbance.

The vaso-motor disturbances to which I especially wish to call your attention are those which are known as the perennial types of vaso-motor catarrh; that is, the types of vaso-motor catarrh which may be manifest at any period of the year, having no certain period of onset and no exact time of cessation. These types manifest themselves whenever the source of irritation is most active and endures in varying degrees of intensity as the source of irritation is present.

They may be rudely classified into four groups—I say rudely, because some one may fit into one of these groupings at one time, and later on show itself in another of the groupings.

(A) A type of vaso-motor disturbance that appears in paroxysms, being attended with congested turbinals; obstructed breathing, moderate in the daytime, almost or quite complete at night; violent paroxysms of sneezing; copious serous discharge from the nose. This type usually lasts from a few days to a week, and is usually followed by a complete period of relief, until another paroxysm develops. Sufferers from this type usually designate their condition as a "cold."

(B) A more or less constant type of vaso-motor turgescence of the nasal mucosa. This is characterized locally by a relaxed sodden condition of the turbinal tissue, which is very much paler than normal. Nasal breathing is very much impaired at all times during the day, complete obstruction being present at night. Violent paroxysms of sneezing occur usually in the morning and frequently at intervals throughout the day.

(C) A more or less constant type of vaso-motor catarrh, in which the symptoms are most frequently manifested at night, although paroxysms may occur during the day. In this type there

is also in connection with the vaso-motor turgescence of the turbinals a similar disturbance in the bronchial mucous membrane. The turbinal congestion is very florid. The obstacle to nasal breathing is apt to be paroxysmal during the day, and usually transpires at night during the early morning hours. Sneezing is usually manifest when the breathing is markedly obstructed. Coughing and wheezing in the chest, with paroxysms of asthma, may be present.

(D) A type which is observed most frequently in children. It is characterized by frequent attacks of sneezing, obstruction to nasal breathing, frequently complete at night, more or less serous discharge from the nasal chambers, mouth breathing at night and snoring. The turbinates are most frequently congested and swollen, occasionally swollen and edematous-like in appearance. The condition is practically continuous, with periods of exacerbation. It usually subsides in the warm weather when the child is much out of doors.

The type of cases which may be considered under group A is usually of the toxic form. They have as their active, exciting cause the existence in the circulatory fluid of some form of toxin which acts as a direct irritant to the vaso-motor system. They are usually the products of auto-intoxication from gastric or intestinal disturbances. Imperfect eliminations may also be a factor in the production of this form of vaso-motor turgescence.

History of Case.—A case of this type is exemplified by a civil engineer engaged in large civil engineering movements. A man in apparently perfect health, extremely nervous, an intense mental worker who has no time or desire for physical exercise, smokes and drinks to a moderate degree. Came to me for relief from a cold, from which he states he is a frequent sufferer. These paroxysms usually endure from ten days to three weeks. Eats very heartily of rich foods. He noted that the attacks are usually ushered in after a very laborious day, followed by a hearty meal. He states that he has never been conscious of an exposure sufficient to produce a cold. They occur as frequently in the tropics as in the temperate zone. The most annoying symptoms to him are the frequently recurring violent paroxysms of sneezing, the profuse serous flux and the entire obstruction of the nasal chamber. Inspection demonstrated that the turbinals were engorged, nearly filling out the lumen of the nasal chamber, reacting quick-

ly to cocaine. A purgative, limited diet and an hour's brisk walk daily brought immediate improvement.

The type of case which we observed under group B is the neurasthenic. This condition is observed most frequently in women. We find that the disturbance is manifested in the ambitious society woman who seeks to lead along the various avenues open to her activities, as well as among that large class of working women who are striving to adapt themselves to fields in which their nervous and physical energies are being constantly overtaxed.

History of Case.—An example of this form is a young woman stenographer, twenty-eight years of age, employed in a local business office. In order to increase her financial resources she is employed in the evening as stenographer in the office of one of the correspondents of an out-of-town newspaper. She presented herself to me some months ago for professional advice. She is of moderate height, of slight form and quite nervous manner. She stated that she had great difficulty of breathing, which was almost constant, the obstruction being complete at night; headache was more or less constant and very intense after paroxysms of sneezing, which occurred in paroxysms of great intensity, often attended with marked exhaustion. Examination of nasal chambers demonstrated the nasal mucosa somewhat paler than normal. The mucosa over the turbinates was of a pale, pinkish-white color. The turbinates were intensely relaxed, so much so as to fill out completely the lumen of the nasal cavities. The turbinates rather slowly contracted up fully under the use of cocaine; the urine showed excess of phosphate; no indican. The relinquishing of the excess of work, the administration of the proper nervines, the taking of a proper amount of exercise, the obtaining of the normal amount of rest and the administration of the required local treatment brought about complete resolution after several months' care.

Tho-e cases coming under group C are in active, vigorous men, of strong mental caliber, who are exacting and strenuous workers. They are of the class who spend long hours in active mental employment in office rooms, without taking a proportionate amount of physical exercise, in many cases practically none. They are frequently endowed with good digestive organs, and are fond of the best products of the market. Their food usually consists largely of meats, especially beef, mutton and lamb, and these are partaken of at all three of the daily meals.

History of Case.—This condition may be exemplified by the history of a very busy office worker. The patient is a man forty-eight years of age, in apparently excellent health; no disease demonstrated in any of the organs or great systems of the body; a most intense worker, especially during the season when his activities are in greatest demand; eats sparingly, though always with good appetite; takes practically no regular exercise; states that for several months he has had a dry, paroxysmal cough, which comes on at varying periods of the day, which would endure for an hour or more and then subside. Ofttimes he would be entirely free of the cough throughout the day, when towards the late afternoon, after a particularly arduous and trying day, it would start up. At times he thought the paroxysms of coughing occurred at intervals of about six hours, when this theory would be broken up by its absence throughout the whole day. The paroxysms occurring about two to three in the morning were the most distressing. The paroxysms of coughing during the night were always attended with complete nasal respiratory blockage of one or the other nostril, frequently of both. The same degree or a more moderate obstruction to nasal breathing was frequently manifested with the day paroxysms. There was frequently an uncomfortable feeling of tightness about the sternal region during the paroxysms. Distinct wheezing was occasionally felt but no characteristic asthmatic manifestation had as yet developed. Examination of the nasal chambers showed the existence of a moderate hypertrophic nasal catarrh; examination of urine showed excess of phosphate, but no other abnormality. Under the appropriate treatment this patient had a slow but continuous restoration. Violation of the within laid down rules would be speedily followed by its own punishment.

Another patient was a vigorous, healthy individual of twenty-eight years. He complained of a moderate degree of difficulty in breathing through the nasal chambers during the day. His great distress occurred usually between one and two o'clock in the morning, when he would be awakened by sneezing, coughing or a sensation of impending suffocation. Nasal obstruction was complete at this time. The remainder of the night would be passed in a more or less troubled slumber. A violent paroxysm of sneezing usually occurred on arising in the morning. Physical examination demonstrated the turbinates very much con-

gested and so hypertrophied as to nearly fill out the lumen of the nasal cavities. Contraction was quite fair under cocaine, only showing here and there areas of structural hypertrophy. The history obtained was as follows: He is employed in one of the scientific laboratories of the Government, where his work is very exacting in character. His hours of employment are from nine in the morning until four in the afternoon. For two years he has been attending a course in one of the law schools. It was his habit to go direct from the Department to the University, where he spent from two to three hours in lectures, etc.; his evenings were invariably spent in study; his retiring hour was about twelve, and he rose about seven in the morning; his digestion was good; urine showed excess of phosphate, no indican; he took no physical exercise and always used the cars instead of walking. I indicated to him the necessity of cutting out much of his work, the taking of a certain amount of physical exercise and living a more normal life. I refused, through cauterization or other surgical methods, to attempt to restore the patency of his nasal cavities. My efforts, though repeated and insisted upon at each subsequent visit, seemingly fell upon barren soil, and, as usual, he sought other advice. About six weeks thereafter he returned to me and recounted his experience. Several cauterizations had taken place without relief, and he had been twice advised—even to insistence—that he should have his turbinates torn out. A thorough consideration of the subject again caused him to follow my advice; finally deciding to relinquish his law course. At the end of two months he reported for inspection, announcing that he had, for over two weeks, felt entirely well. On inspection of the nasal chambers I found them in a perfectly normal state.

The cases coming under the group D are the most interesting with which I have been brought into contact. I have observed many of these cases. I have seen the condition markedly manifest in children of all ages, even as early as the third year of childhood. All children in which I have witnessed this disturbance have been of the decidedly neurotic type and usually of parents of the same temperament. Some of these children during the spring develop rose-cold, others in the summer will develop hay fever, the great majority only showing the evidences of perennial vaso-motor catarrh. They are usually thought to be

afflicted with adenoids, and several that I have had under observation have been operated upon for this condition.

History of Case.—A boy of seven years was brought to me with the history of obstruction to nasal breathing, moderate by day, complete by night; mouth breathing at night; occasional paroxysms of sneezing; very restless sleeper; very nervous by day, appetite poor and fickle, with frequent attacks of acute indigestion. He had been operated on in San Francisco and again, six months later, in Denver, for adenoids. No relief from symptoms followed either operation. The condition on presentation to me was quite as it had been before the first operation. Examination of nasal chambers demonstrated swollen, congested turbinates. Post-nasal chamber free of adenoid tissue, and quite roomy. Suggestion as to the proper food, abundance of fresh air in sleeping apartment, plenty of open-air exercise, without excitement, a nap in the early afternoon, with an early bed hour, quickly brought about a relief of all symptoms.

All forms of vaso-motor catarrh, whether of the paroxysmal or the perennial type, require as the essential predisposing factor the existence of what is known as the neurotic temperament. This nervous temperament manifests itself in individuals prone to these vaso-motor disturbances either in the exalted type of excessive nervous energy or in the reverse condition of lowered or exhausted nervous energy, which latter is usually diagnosed as neurasthenia.

The exciting causes are varied. In many cases we have some disturbance in connection with the gastro-intestinal tract or other system of the body. Most frequently the direct exciting cause is undue mental strain, however produced, with a complete disregard of all the ordinary hygienic rules of healthful living. These conditions are brought about gradually, through a period of years. The ordinarily healthy body can withstand the wear and tear of life through the young adult period with a thorough disregard of the proportionate amount of exercise, air, food and rest to the work done or dissipation participated in. As middle adult life follows, the sins of the previous period are ready to bear fruit, while the elasticity of the system is unable to meet the ever present demands, with the result that the equilibrium is destroyed and the vaso-motor system sends out the first alarm of impending nervous derangement.

Treatment.—The individual case should be carefully studied from all aspects. The gastro-intestinal tract should be carefully considered. The urine should be examined. The character of the food ingested should be gone over and the diet thoroughly regulated. The condition of the working and sleeping apartments should be investigated, and when defective in the proper degree of good air and light, should be corrected. The habits of life should be investigated, as to the use of stimulants, tobacco, coffee, tea and amusements, and if these are noted in injurious excess they should be restricted or prohibited. The character and amount of work done, as well as the hours devoted to work, should be considered. The amount of work, rest and physical exercise should be prescribed, according to the exigencies of the case. Drugs should be limited, and only those that are specifically indicated or that are demanded to tone up the general vitiated nervous function are to be administered.

Local Treatment.—The direct local treatment to the disturbed innervation of the nasal mucosa should be as bland and unirritating as possible. Unless there is actual degenerative change in the turbinal tissues, surgical interference is thoroughly to be discouraged.

It is to be lamented that so much surgery has been practiced upon the sufferers from this so ill understood condition. They too often fell into the hands of the rhinologists whose vision does not extend beyond the nose, with the result that normal, though badly functionating turbinates, are ruthlessly torn out, thus leaving the patient with ills that are greater than those for which they sought relief.

In closing this paper I cannot too strongly deprecate the prevailing practice which exists among a large element of the growing immature rhinologists of tearing out middle and inferior turbinates, so essential to the performance of the physiological functions of the nasal chamber, because they do not recognize the condition which causes the engorgement, nor the rational methods of treatment to bring about the restoration to the normal.

Dr. Bryan had been much interested in the paper, which was upon a subject that should be emphasized throughout the profession so as to bring enlightenment both to rhinologists and to general practitioners concerning a class of nasal affections little

understood. It is astonishing how much unnecessary surgical work has been done in the nose for the relief of this entirely functional disturbance. This deplorable state of affairs, it seemed to him, is due to the fact that many rhinologists have never been practitioners and are not accustomed to take cognizance of the constitutional state of their patients. The patients described by Dr. Richardson suffer intensely and wander about from one rhinologist to another until they are able to persuade some one to do a radical operation. It is a serious mistake to operate upon these neurotic patients, because almost assuredly their last state will be worse than the first. Dr. Bryan cited cases of this sort; many of them may be cured by simply stopping the incessant local treatment and topical applications.

Dr. McKimmie had enjoyed this timely and well presented paper. It may be taken not only as a protest against excessive surgery of the nose, but against overtreatment by local measures. The criticism of the prevalent habit of ruthlessly excising turbinals appealed especially to him; it is impossible to put tissue back in the nose after it has been removed and, therefore, radical measures ought to have very careful consideration before they are employed, and then only after the possibilities of general measures have been exhausted.

Dr. O. Wilkinson had been especially interested in the paper because he is among those who believe that, after all, the nose is a part of the body and suffers along with, and, at times, because of disorders of, the rest of the body; there is no reason why overstrain might not produce nasal difficulties as well as functional disturbances in other parts. He commended the reference to autointoxication as a cause of the class of cases under consideration. He agreed with other speakers that the atrophic, dry and scaly noses that result from the reckless removal of turbinal tissue are much more difficult to treat and give rise to much more distress than the original stuffiness for which operative measures had been undertaken.

Dr. Dye expressed his pleasure at hearing the paper, and said that his experience had paralleled that of the other speakers.

Dr. Carr believed that conditions similar to those of the nose under consideration are occasioned in other mucous membranes, such as the uterus, vagina and bronchi, by like constitutional disorders. Treatment of gastro-intestinal faults, together with the taking of plenty of fresh air and exercise, usually will accomplish much good in all such cases. When the digestion seems good and does not offer an explanation of the phenomena, examination of the urine will often show high specific gravity and the presence of an excess of mineral constituents, all of which may be indicative of excessive nervous excitement. He had observed that excessive nervous excitement, especially that dependent upon sexual excess, is apt to bring on congestive conditions in

the nose. What is the prognosis in these cases? Can the patients be induced to exercise sufficient self-control to rid themselves permanently of the unpleasant symptoms?

Dr. Williams said that the paper and the discussion thereof show that the rhinologists of Washington, at least, are also physicians. He agreed with the views expressed as to the rôle of gastro-intestinal faults in causing nasal disturbances. Much had been said about some obscure neurotic vaso-motor disturbance, dependent, according to some of the speakers, upon a neurasthenic state, and allied in its nature to angioneurotic edema; this is very rare indeed; most of the cases are due to some toxic irritant circulating in the blood and affecting the mucous membranes wherever susceptible. Bouchard has shown that there are toxins which have special effects upon special tissues, sometimes having a tetanizing effect, sometimes a pressor and sometimes a depressor effect. Dr. Williams especially objected to the use of the term "nervous influences" in the causation of the disturbances under consideration; these are most often of toxic origin. How much does vitiated air have to do with these cases? He believed this factor to be of importance, especially among the employees of departmental offices.

Dr. Bryan said that the term vaso-motor disturbance is an old one, expresses clearly a definite condition and should be retained. Angioneurotic edema, in his opinion, is not a very rare condition; it is one that occurs rather often in the nose.

Dr. J. D. Morgan said that as an internist it would seem to him that cases of the sort under discussion should be referred back to the internist for treatment. There should undoubtedly be less intranasal surgery; and that which is done should be done only by competent rhinologists. Faults of the kidneys and bowels are most often at the bottom of disturbances of this sort. He referred to a case of acute edematous uvulitis which he had reported in a paper read before this Society May 8, 1889; it was dependent upon overeating and a season of debauchery. The swelling was relieved by local applications of cocain and by brisk catharsis by salines.

Dr. Chappell said that all present should be grateful for the paper. It illustrates that not only in rhinology but in other specialties there has been injudicious work done by reason of overenthusiasm. It indicates also that, contrary to the opinion recently expressed here, the day of the general practitioner has not passed. In his opinion all specialists should first be general practitioners, and should be subjected to a special examination to determine their fitness to claim expert knowledge in any special line of work. Cases of the sort spoken of in the paper should be referred back to the internist for treatment.

Dr. P. C. Hunt said that it seemed to him that such cases as those under discussion merely represent incidental local mani-

festations of a general vaso-motor instability due to some constitutional disorder. The treatment, then, should be systemic throughout.

Dr. Richardson had seen several cases of angioneurotic edema of the upper air tract, but it was not of such cases that he had wished to speak. Angioneurotic edema usually manifests itself elsewhere, in addition to the air passages, such as cutaneous edemas, edema of the glottis, etc.; it is usually consequent upon some transient toxic state, and does not tend to recur habitually. The cases he had in mind may occur in subjects who indulge in purely intellectual overwork, but who in other respects observe the best hygienic habits. One of the worst cases cited in the paper was that of a man who works alone in a large, well-ventilated room, and whose only hygienic faults are excessive mental work and deficient bodily exercise. Dr. Richardson sees toxemic cases also, but these are usually women with greatly run-down nervous systems; whether such cases are neurasthenic or not, the condition and the cure come to the same thing in the end. Whatever terms are used, in these cases there is some vascular disturbance which causes the tissue to swell and an exudate to take place; and the cure is rest and good hygiene. His protest was especially directed against the ruthless destruction of turbinate bones which are not diseased, but are merely the seat of a functional disturbance. These patients cannot be helped after these most important organs of the respiratory apparatus have been removed.

CASE OF ADDISON'S DISEASE.*

By E. W. REISINGER, M. D.,

Washington, D. C.

I have ever been deeply interested in gland therapy and have frequently availed myself of this form of treatment, with excellent results; hence it is with more than the usual interest I present this paper, for it not only demonstrates the utility of this line of treatment, but is the only rational plan in such a case.

I was called to see Pauline H., white female, 18 years old, September 10, 1904, which is about six years ago. I have known the young lady from childhood. She comes from a highly neurotic and excitable family and one that presents a strong history

* Reported to the Medical Society, February 23, 1910.

of tuberculosis; so when I found her with marked twitching of the corners of the mouth, spasmodic contraction of the hands and twisting of the head—the head would turn in one-quarter circle and the corners of the mouth twist downwards about every three minutes, and at the same time the violent motion of the hands would be noticed—with these symptoms and the family history I naturally diagnosed chorea, but fortunately did *not* state the same to the family.

I gave the usual treatment and saw the patient daily for about five days; then, in spite of well-opened bowels, I noticed that the skin presented a very light jaundice hue and in a day or two the sclerotics had a bluish tinge. I was greatly interested, and closely watched the case. The discoloration of the skin steadily increased, the color changing to a decided yellow, and later to a light bronze; the eyes by this time were most curious, presenting a decided brown iris, surrounded by a pale blue sclerotic, the nervous symptoms were intense and only controlled by large doses of potassium bromid and morphin. The patient now began to lose flesh, and from a large, well-nourished, healthy young woman she began to look drawn and thin.

About this time, which was two weeks from my first visit, a leucodermic spot appeared on the left thigh and another on the right buttock, and marked weakness appeared; the patient would lie on the sofa and complain of being tired, she lost all interest in reading and the family, and spent as much time alone as possible. I diagnosed the case Addison's disease, explained its gravity to the family and asked a consultation. Drs. G. Lloyd Magruder and William Osler were called; the three of us made a most careful examination of the girl, and the diagnosis and the treatment were sanctioned by these eminent consultants. I had put Miss H. on Armour's Extract of Suprarenal Gland. She began with one capsule, a grain of the gland, daily, increased to two the second day, and in four days was taking three grains. This was continued for a week, then 1½ grains were given three times daily for six days, but the dose was reduced to three grains in the 24 hours on account of heart symptoms, and kept there throughout the malady. On the day I diagnosed Addison's disease I ordered her to bed, and there we examined her. She presented by this time great emaciation, was nervous, in intense agony when moved, and complained of great pain in the

back and the feet; so intense was this symptom that every care had to be taken in moving the bed clothes or the patient.

It is well here to review the case. From a large, strong woman she had become a highly neurotic mass, suffering agony at the slightest motion, being unable to perform any function unassisted; her body was so *thin* that the extremities appeared simply as an osseous framework over which the bronze skin was tightly drawn; her pulse was rapid, weak and compressible, and often over 130; respiration rapid and shallow; semi-delirium or delirium was often present; tongue heavily coated; and, in fact, she appeared like a case in the last stages of typhoid; her death was hourly expected by her family and priest, and she was practically given up—but somehow I never lost confidence; I pushed the extract of the suprarenal gland, met the exhaustion with digitalis and nux vomica and gave nourishment every two hours. I saw the case daily, and at each visit was informed that I would be notified "if she died before I returned." I then and often since have recalled the remark made by Wm. Osler; as he was leaving the house he said, "Be sure to get an autopsy, Doctor," and I replied, "Doctor, *you* had a recovery."

The case was fought step by step; every symptom was watched and met; the patient first began to clear mentally, she had no return of the delirious state, her eyes brightened, the pain gradually abated, her appetite improved, the pulse dropped to 90 and the respiration became normal, tongue gradually cleared, and she began a slow but progressive convalescence.

I now saw her every third day, and was surprised at the rapidity of her return to health. (I here wish to call your attention to a photograph of the case taken a year after the attack.) She now enjoys ideal health and weighs 165 pounds. The severity of the case, its variety and unusual result make the differential diagnosis worthy of note; therefore, I respectfully append the same. I have not gone into the etiology, morbid anatomy, etc., on account of your knowledge of such cases, but I believe this case was due to tuberculosis of the suprarenal glands, this deduction being due to the family history, the condition of the case and its etiology.

Differential Diagnosis.—If you remember the words of the discoverer and describer of this disease it is hard to make a mistake; "the color of the skin, the prostration, the irritability of the

stomach, the anemia and languor, and feeble heart action" make a picture never to be forgotten; nevertheless, the gravity of the disease, its rarity and the necessity of its speedy recognition make it advisable to consider each similar malady or condition.

1. The pigmentation in scleroderma is diagnosed by its brawny induration and hardness.

2. In ulcer of the stomach and dilatation of the same, by the prostration of Addison's disease and by gastric analysis.

3. Chronic arsenic and silver poisoning, by the history of the case and the chemical analysis of the excreta.

4. From exophthalmic goiter the pigmentation may be differentiated by the well marked and known symptoms of this disease.

7. Vagabond's disease, irritation of dirt and lice, is easily diagnosed, as it only presents the pigmentation.

8. Pregnancy—shortly clears itself.

9. From cancer, lymphoma and tubercle, by the physical examination.

10. Chronic malarial poisoning, by examination of spleen and blood.

Now to sum up this report. I wish simply to second the words of our eminent teacher, Dr. William Osler, and to state that we *have* a cure for Addison's disease; that when a case is seen early and the extract of adrenals pushed, we may hope for excellent results. I believe that the early recognition of this case, due largely to chance, and the continuing of the extract *throughout* the disease is what saved the life, and we now possess one more remedy in which we can place our confidence and faith.

I have often seen Miss H. during the last six years, and she has enjoyed and is enjoying perfect health; her skin is only slightly tinted, sclerotics are white and she is very strong; but whenever put to a severe nerve strain she has a return of slight twitching of the muscles of the face, which is at once controlled by a return to Armour's Extract of the Suprarenal Gland.

Thanking you for your courteous attention and hoping you will see proper to honor me by a general discussion I respectfully submit this paper.

Dr. J. D. Thomas said that he had been interested in the description of the case, especially so since it had ended in recovery, a termination so rare and unexpected. He remembered very well a case which had been shown a number of years ago by the late

W. W. Johnston, the patient being a young man, who had not been cured but was much improved by treatment. While Dr. Reisinger's case may have been easy of recognition, this is not always so. Dr. Thomas had reported to the Society, four or five years ago, two cases of Addison's disease, both patients having advanced tuberculosis, and both dying more from the tuberculosis than from the Addison's disease. One died in this city and came to autopsy; the right lung showed carnification; both adrenals were calcified, one being entirely destroyed. The other patient was a Greek; the only marked symptoms of Addison's disease being the discoloration of the skin, especially at pressure points and in flexures. This man returned to his native land where he died. Dr. Thomas congratulated Dr. Reisinger on the outcome of his case. Though some patients have apparently been cured by the administration of adrenal extract, the effect of organotherapy in this condition is not nearly so uniform as in thyroid therapy.

Dr. I. S. Stone said that there are certain cases of pigmentation of the skin in diseases of the bile passages which cause hesitation in diagnosis. He recollected one case, in particular, in which the cutaneous pigmentation was marked, and in which there was a history of tuberculosis; but there was tenderness in the region of the gallbladder, although the organ was not enlarged; an operation gave relief and the pigmentation disappeared. In another case there was much difference of opinion among the medical men as to diagnosis; there was so much evidence of gallbladder disease, however, that operation was indicated, whether Addison's disease was present or not; all the symptoms were relieved by the operation.

Dr. Barton congratulated Dr. Reisinger upon the outcome in his case; whether or not the treatment was responsible for it, the patient got well. It seemed to be a self-evident proposition that the exhibition of suprarenal extract in Addison's disease can only do good by supplying a certain amount of normal adrenal secretion to an individual deficient in this substance by reason of damaged suprarenal glands. But this cannot be done by administering the extract by the stomach; it can only be done by introducing the suprarenal substance into the blood stream. The active principle in the adrenal extract is an aminopyrocatechin, and this is destroyed by the stomach and intestinal juices.

Dr. Williams said that because a certain substance does not affect a healthy person it does not necessarily follow that the substance will not affect a diseased one; Dr. Barton's statements should be balanced by the experience of those who have administered suprarenal extract in cases of Addison's disease.

Dr. Williams related the case of a young girl, the daughter of a Boston physician, whom he had seen in England, whither she had gone in search of health; it was discovered that she had Ad-

dison's disease, but it was interesting to note that the diagnosis might easily have been missed except that she was examined stripped, when the distribution of pigment in the skin made the diagnosis clear. She died, and at the autopsy no tuberculosis of the adrenal bodies was found; but both glands were atrophied, one being represented by the capsule only, the other being shrunken to a mere vestige.

He called attention to the fact that the habit movement in Dr. Reisinger's case was not a psychogenetic tic, but it was due merely to nervous instability as a consequence of the disease, as was proven by the disappearance of the movement during the administration of the adrenal extract.

Dr. Acker recalled that in the early '80's be had made an autopsy on a case of Addison's disease, which occurred in a young man twenty-four years of age. He had been entirely healthy until two or three years before his death. Both suprarenal glands were found to be caseous, but there was no evidence of tuberculosis elsewhere.

Dr. Chappell said that it seemed to him that the administration of adrenalin could only do good by supplying artificially what was lacking in the output of the glands. But how could the administration of adrenalin cure a tuberculous focus anywhere? And if the tuberculosis of the suprarenal bodies is not cured, how can the patient relieved of the symptoms of Addison's disease by the use of adrenalin continue to do well after the drug is withdrawn? In such a case it would seem that the function of the suprarenal glands had been interfered with temporarily.

He believed that he had seen two cases of Addison's disease, in a father and daughter. Both died, and no post mortem was had in either case. The father was always a slight man, weighing not over 100 pounds, but he lived to be 70 years old. His symptoms were cutaneous pigmentation, weakness, diarrhea, all of which continued until he wasted away. The daughter died in the same way a few years later at the age of 50.

Dr. Isabel Haslup-Lamb said that as to the necessity of continuing the administration of organo-therapeutic agents thyroid extract is only administered to the point of saturation; it is then withdrawn and not given again until positive evidence of further need presents. It is said that the pituitary gland may take up the functions of the suprarenals.

Dr. Reisinger said that notwithstanding theoretical considerations adrenalin was given throughout the treatment of this patient, was persisted in, and she finally got well. The mucous membrane of the mouth was not pigmented. An interesting feature was the extreme rapidity of the pulse during the most desperate period of the illness. He remarked in reply to Dr. Chappell that Addison's disease is never tuberculosis, although it may be due at times to the destruction of the suprarenal bodies

by a tuberculous process. Dr. Reisinger believed that all cases of Addison's disease should be given the benefit of the doubt, and should be energetically treated by the administration of suprarenal extract.

THE X-RAY AS A METHOD OF DIAGNOSIS.*

By A. H. STAPLES, M. D.,

Washington, D. C.

Your attention is invited tonight to a brief review of a subject which has attracted the attention of the whole world, particularly among the best scientific men who have done so much to develop a discovery which has revolutionized the science of surgery, putting it on a very much higher plane than it was before this method was applied as an adjuvant. In the field of surgery as a positive method of diagnosis it is unsurpassed, and in its application to the skin in certain pathological and malignant conditions it has not its equal. No limit to the possibilities can at the present day be seen, as time will produce applications of this force of which we do not now know.

The x or unknown ray or force is a condition that we do not understand. Much discussion has taken place among scientific men who have been working in this field, and as no definite determination has been reached, it will with all probability always be called the x or Roentgen ray, a name historic, for he stands alone as its discoverer.

Only a few years ago, at Wuerzburg, Germany, on December 4, 1896, Wilhelm Conrad Roentgen, in a paper read, gave to the world the greatest discovery known to medicine, showing that the glowing vacuum when agitated by that force called electricity, caused a fluorescence of certain substances, and also caused a reaction similar to daylight to take place on the bromide of silver emulsion on a photographic plate.

Wilhelm Conrad Roentgen, for his valuable gift to mankind, can well be called the father of the Roentgen or x-ray.

It is only with the application of this discovery as a method of

* Read before the Medical Society, March 9, 1910.

diagnosis that we will deal. In the field of surgery there exists an absolutely sterile, reliable, rapid method equaled by no touch or symptomatic judgment. The line of treatment is pointed with perfect clearness, no error of diagnosis can exist, for a photograph of the parts as they really are is, as we all know, true to life.

One of the most peculiar, yet not one of the most important, conditions arising from this force is its power to penetrate through substancss which are opaque to that of ordinary daylight; to this fact it owes its great value as a method of diagnosis.

Roentgen discovered that the substances which fluoresced acted in proportion to the amount or penetration of the rays to reach the screen; as the rays were cut off the substance did not fluoresce when the rays did not reach; thus we have a shadow depending on the degree of opaqueness, of the condition shown on the screen or plate.

Among the substances which fluoresce when brought near a glowing vacuum or tube the one most used is that of barium platino-cyanide, which, when held in a wax matrix or on cardboard or any flat surface, furnishes the instrument with which we are all familiar, the fluoroscope, an instrument from which all daylight must be excluded from between its base and the operator's eyes, and which is an essential.

Where the whole chest or both hips are examined at the same time it is necessary to use a larger screen, from which all daylight is excluded by arranging any nonactinic cloth around the edges, which must envelop the operator's head. Better results are obtained where the room is darkened, with the removal of all metallic splints, dressings or substances which will prevent obtaining good definition. The part should be as near the tube as possible, with the screen resting thereon. This method is very simple, very rapid and of small cost, as there is not the cost of the plate and the time and cost of development. It allows the study of both the normal and pathological part at the same time; the size, positions and movements of the different viscera can be examined. Fractures, dislocations and all other pathological conditions can be viewed by one or many at the same sitting. To get the different angles of view is advantageous as a preliminary examination before a picture is taken, or to obtain the position which will show the best shadow.

To the examiner who uses a fluoroscope occasionally there is

practically no danger, unless in both the examiner and the patient there exists what is called an idiosyncrasy to the x-ray, and who on the slightest exposure will be badly burned. Radiographers who are continually using this method always carry the marks on their hands, and sometimes with disastrous results. Yet where a quick diagnosis is required, a superficial or in an emergency, it is used to advantage. These records are not permanent, although the skin over the part examined can be marked over the position of the condition. Prolonged examination may burn the patient. The eyes of the examiner may develop a conjunctivitis, or the hands supporting the screen may be severely burned.

The denser parts do not allow good fluoroscopic examination in very adipose subjects. In children and thin patients it shows well the deeper portions of the body, as the pelvis, abdominal cavity and skull.

By any of the names by which we know it, the process of making an x-ray picture or a photograph is an exact record, is permanent, and, if properly identified by certain characteristic markings, will serve as the best of evidence in all medico-legal cases, showing the exact pathological condition at the time of the exposure.

The making of a photographic negative for diagnosis does not differ from the usual procedure, with the exception that as the rays leave the center of the target of the tube from a small point called the focal point, and diverge in the shape of a cone, the base of which is in proportion to the distance the plate is from the target, we find that the shadows of the part show larger than they normally are, and in proportion to the distance the target is away from the plate or fluoroscope the size will be increased. In other words, the nearer the tube the subject is placed, as well as the plate or fluoroscope, the smaller will be the size shown of the condition, or practically the normal size. This condition of distortion must be calculated and recognized when either viewing a plate or using a screen.

The study of fractures, their frequency, character and displacement, the complication of displacements or luxations when existing in the same bone, simple dislocations, greenstick fracture, the differential diagnosis of tendon or fracture crepitus, impactions, the amount of callus thrown out, the examination of

a fracture or luxation after reduction, ankylosis of a joint, the union or separation of the epiphyseal bones, for post-operative diagnosis, osteoplastic operations where plastic surgery is indicated, as well as post-osteoplastic diagnosis; for comparison with the normal, in all post-operative bone surgery; in orthopedic surgery, upon a higher plane than ever before, the use of this force is employed. Also in the localization of foreign bodies with precision, showing the exact location, no matter where situated in the body, provided they are of greater opaqueness than bone tissue, or are of a metallic nature.

Fracture is one of the most common pathological conditions met with, and in this field the x-ray has proven itself of the greatest value.

In fractures of the skull resulting from falls, blows or falling bodies, they may be extensive and involve wide areas, or be multiple, or limited to a very small area, as in punctured fracture—a condition that does not allow good x-ray diagnosis. Where there is depression below the line of contour the double opaqueness of the bone, when compared with the shadow of the normal, will show its depth. Fractures of the dome or vault do not show well unless there is some separation of the fragments. In children or very thin skulls the diagnosis of fractures in this position may be made. Fracture of the base of the skull may exist in the anterior, middle or posterior fossae of the base; radiographs of this portion are almost impossible to obtain, owing to the surrounding bone tissue.

Fracture of the superior maxilla is usually caused by direct violence and is generally comminuted; where depression exists it is shown. In the different sinuses it can be studied by a method spoken of later. Fracture of the inferior maxilla is most common in the median line; if of the condyles, considerable displacement will take place. For fractures of both upper and lower jaw, as well as other bones of the face, for diagnosis small sensitized plates or films are used, which, when placed in the mouth with the tube at the proper angle, will show the condition. This method is also used in dentistry to make a diagnosis of pathological conditions of the bones or teeth.

The cervical region of the spinal column is usually the most frequent seat of fracture, which may involve more than one bone, and is most fatal. As there are no bone formations to interfere

with the shadow in this location good radiographs can be made. Dr. Ernest Ringrose, in the *Lancet*, London, cites an interesting case of fracture in the cervical region. "A boy while diving struck or collided with another swimmer. On examination, symptoms characteristic of traumatic conditions of the spinal cord were noticed. On being radiographed a fracture of the fifth cervical was found, with the sixth and first dorsal pushed backwards."

In the dorsal region, the ribs and the contents of the thorax prevent good radiographs. Fracture of the ribs may be partial or complete, sometimes multiple, with very little displacement; when due to direct violence fragments may be displaced. Fracture of the lumbar region of the vertebrae, owing to the shadows cast by the pelvic wall, is difficult to diagnose unless there is considerable separation of the fragments.

Fracture of the clavicle is extremely common, ranking with the radius, which may be partial or greenstick in children, or single or multiple, usually of the middle third, with very little deformity, which may be diagnosed as a sprain unless a radiograph is taken. Fracture of the scapula may be of the body, the inferior angle, the upper angle, the spine, the acromion or coracoid process, the neck or the glenoid cavity. Unless of the two processes, it is difficult to x-ray.

The anatomical neck of the humerus is rarely fractured; fracture of the surgical neck is well shown.

When traumatic conditions exist of the shoulder or elbow, and where any manipulation is impossible, where the swelling is great, no matter how slight the injury, the prompt use of the x-ray will outline the treatment; much valuable time is saved, as the damage done may be enough to demand an operation.

The ray will show whether a fracture exists, and if one is present, whether it is transverse, through the condyles, through the epiphyses or the olecranon, intra- or extra-capsular. The olecranon is very commonly damaged, either from forcible contraction of the triceps or direct external violence; with considerable or no displacement, perhaps drawn very much out of place, which will necessitate wiring, and, unless replaced in the normal position, may produce loss of function of the arm; here we see the advantages of a post-operative diagnosis, as well as watching the process of repair as union takes place.

No fracture of the radius or ulna is easily diagnosed, differentiating the diagnosis of single from double Colles, or where Colles is compound, or associated with styloid or scaphoid separation, or the separation of the epiphysis, or comminution. The styloid process may be alone involved, may be fissured. When there exists a fracture of the lower end of the radius there may be dislocation of the carpus, known as Barton's fracture. Usually there is little displacement, owing to the articular ligaments of the wrist holding the bones together as a splint. Fracture of the phalanges is easily shown.

In fracture of the pelvic bones there may be considerable separation of the portions, or displacement, and may be of the rim or the individual parts.

Fracture of the femur is common in elderly subjects, particularly of the neck, is rarely impacted, transverse or oblique, and may be intra- or extra-capsular, with injury to the great trochanter, or of the upper portion of the shaft. Before the union of the epiphysis separation may occur. Owing to the muscular traction of the thigh there may be much separation, overriding, with a transverse fracture of the ends of the bones or the separation of fragments when comminuted. Where this condition exists, to bring the ends to their normal position or to facilitate the approximation of the fragments where wiring is indicated, the very ingenious device of our Dr. A. R. Shands may be used, a traction apparatus which, by a gradual extension in the correct direction, the process of wiring is much facilitated and the results much more apt to be perfect than with the use of any other method. After wiring a post-operative diagnosis should always be made, to see the existing condition and to watch the union; in fact, in some cases several examinations would increase the chances of better results more than one.

Potts fracture is an oblique or transverse fracture of the fibula. Compound fractures of both tibia and fibula are common, or a fracture and luxation of one or the other bone, one bone being uninjured. A separation of the tibial tuberosity may exist. Where very little displacement occurs the fracture may be of the spiral or twisted form, with considerable swelling, the diagnosis may be obscure and will be made absolutely clear with an x-ray examination, which will also show any fracture of the external malleolus.

We see that in traumatic conditions of the ankle there is a condition sometimes called *sparins*, where there may exist fracture of the articular portions of the ankle of sufficient importance to necessitate an operation, and again much valuable time might be lost. A good rule to follow is to make an x-ray examination of all traumatic conditions as soon as possible, to make an exact diagnosis and to outline the treatment necessary for that particular or any other traumatic condition. Where wiring of the patella is indicated, as well as post-operative diagnosis, from time to time the ray may be used.

It is estimated that one dislocation occurs to ten fractures, and while the characteristic position of the dislocated part is pathognomonic of the condition, but with swelling and very slight displacement, the radiograph is advised. In the differential diagnosis of luxations or fractures or the association of dislocations with fractures, the ray is essential.

The shoulder is said to be dislocated as often as all other joints taken together; the elbow next. The position of the humerus may be in any direction out of the glenoid cavity; subcoracoid very common in the anterior position; downward or subglenoid is rare; supraglenoid very rare.

The clavicle may be dislocated at either or both ends, usually forward, sometimes backward or upward. Elbow luxation is frequent; the radius and ulna may be displaced together backward, forward, inward or outward, and what has been said of early radiographic diagnosis in fractures applies in all forms of dislocation. The radio-ulnar or wrist joint may be dislocated forward or backward, the carpus may be placed backward or forward and sometimes outward, completely or partially. In the complete forms the cuneiform bone retains its ralations with the scaphoid and semilunar, but is displaced from the radius; the semilunar is one of the most frequently dislocated bones of the wrist. Of the metacarpo-phalangeal joints, that of the thumb is common.

The bones of the pelvis may be dislocated from each other at the pubic or sacro-iliac symphysis; this is usually associated with some form of fracture due to direct violence. Luxation of the coccyx is rare.

From two to ten per cent. of all dislocations take place at the hipjoint; backward dislocation is the most common, due usually

to direct violence, from below upward. In congenital dislocation of the hip, after the proper x-ray examination, the method of Dr. Adolph Lorenz, the bloodless operation for reduction, may be used. We are all familiar with the reports in the papers when he came to this country to perform the operation on the child of Mr. Armour, of Chicago, as well as with the demonstrations he gave in this city.

In diseased dislocations, as in tuberculosis, osteo-arthritis, or syphilis of the hipjoint, we may find complete or partial absorption or necrosis of the head of the femur, as well as the acetabulum.

Kneejoint luxations are divided into forward, backward, outward, inward and by rotation; when complete the tibia lies in front of the condyles and may be displaced upwards for a considerable distance. Dislocations of the semilunar cartilages are very difficult to x-ray, owing to their translucence. Luxations of the patella may be rotated or displaced to the outer or inner side of the kneejoint; the outer side is the most frequent.

The lower end of the tibia or fibula may be dislocated outward and forward, and with all the articulations of the tarsal and metatarsal bones and the phalanges, allow good radiographic diagnostic pictures.

Foreign bodies in the human anatomy are derived from several sources, those which are either driven in by physical force, or bodies placed in cavities, particularly by the insane, those swallowed or those which are developed within the body. Some are driven into the skull, as after a fall on a sharp metal point, which may be broken off, or splinters of wood, which may penetrate the dome of the skull, or bullets, which is a common occurrence; these are either perforating, where the bullet passes through the head, or penetrating, where it remains in the brain. At the wound of entrance the opening in the external table may be very small, whereas the inner table may be quite extensively damaged; this also holds good in other perforating bullet wounds where the point of exit is considered. The application of the x-ray as a method of localization is far superior to any other method; it does away with the fad of trephining, the many exploratory incisions through the brain coverings, as well as damage to normal brain substance by the vigorous use of the metal probe in all directions, trying to find the path of the bullet.

Dr. Makenzie Davidson has done more in the field of localization of foreign bodies than any other experimenter. In a paper which appeared in the *British Medical Journal*, August 20, 1898, was given a method which has been of the greatest value to mankind, especially to surgeons. This method consists in making two pictures of the skull on the same plate simultaneously, with two tubes or with a tube with double targets; where two tubes are used both must have the same degree of penetration; or one tube may be used by changing its position from that at the time of the first exposure directly over the center of the skull, and the second made with the tube changed from two to two and a half inches to the right or left, not changing the distance it maintains from the plate. With the second exposure the same length as the first, the plate developed shows two distinct shadows of the bullet, or, if we follow the rays from the target to the plate, we will find that there is developed a double set of outlines of the bullet fused into one. Where two plates are used on the same plane the tubes must be farther apart, say about two feet or less, but when two plates are used at right angles to each other the tubes must be placed as per diagram. After developing and placing on the radiographic table in the same position as they occupied when the exposure was made and with the tubes in the same position, when two silk lines are placed with small weights attached on the center of the shadow on the plate and carried to the center of the targets of the tubes, these lines will cross at the exact position of the bullet and will show how far it is from the outside of the skull; measurements being made from the target to the skull wall on the upper side. There are many variations of this method and all of them of practical value, but the principle involved is as above.

Making two exposures as above described is called stereo-radiography, and has many points of advantage over the single-exposure; any deficiency in one plate will be compensated for in the other; it will show two angles of the condition. Not only for foreign bodies is it advantageous to use this double method, but in all examinations where a diagnosis is desired; in all pathological conditions, no matter where in the body. When this double set of shadows is taken with two tubes it will be impossible to view the plate or plates together or alone; to get the desired view it is, therefore, required that an instrument called

the refracting stereoscope should be used, which brings the lines of the shadow superimposed into one.

Foreign bodies in the nose, eye, ear, throat, trachea, esophaagus, bronchi, lungs, stomach, intestines or in any other part of the anatomy can be radiographed, if of sufficient density to show their outline against the density of the bone; they can be localized as to position.

Foreign bodies which are developed inside of the human anatomy are interesting subjects, and we find many kinds and conditions; some are of great hardness and some very soft. The most important are renal, hepatic and prostatic calculi.

The anatomical position of the kidney must be remembered, as also that of any and all viscera, when radiographed. The kidneys lie in the right and left hypochondriac regions, their upper borders are on a level with space between the eleventh and twelfth dorsal vertebrae, that of the left kidney a trifle higher than the right; the lower end two inches above the crest of the ilium; thus we see that there are no bony formations except the vertebrae to prevent good radiographs; but to show the exact position of the kidney is difficult, particularly in a very fat subject.

Dr. Edward W. Shenton, radiographer to the London Hospital, in a report of 200 cases of radiographic examination for suspected renal calculi, found evidence in 39 cases; in 8 cases operated on the calculus was not found on examination of the plate, but nevertheless existed. This difference is dependent on the degree of translucency; some calculi are not opaque enough to show a shadow. The oxalate of lime is more opaque than phosphatic or uric-acid calculi. In the remaining cases of the two hundred, not operated on, the negative evidence of the examination was shown by recovery. It is very often the case that a stone will show in the plate and not show in the print.

In the *Annals of Surgery*, Dr. C. L. Leonard, speaking of 59 cases of suspected renal stone, states that 12 were positive. He also asserts that an absolute negative or positive diagnosis of both renal and ureteral stones can be made with an error of less than three per cent.

Dr. J. Hutchinson says that the skillful use of the x-ray will rarely fail to demonstrate the exact position, the size and number, unless adherent together, of renal stones. The early and

positive recognition of the stone not only secures the resort to operation before the calculus has led to secondary degenerations of the kidney structure, but in certain doubtful cases, the proof afforded by the rays that no stones exist will save the patient an unnecessary and possibly a dangerous exploratory operation. In no department of surgery has the x-ray been of more use than in that of the kidney ; it is especially with regard to the kind and severity of the operation that the rays are so valuable. There is no reason for an incision longer than is required to give free access, and still less for disturbing the relations of the kidney by dragging it forcibly into daylight or making multiple incisions or probing.

In very adipose subjects, or in the case of very small stones or those very soft or translucent, the Roentgen ray ordinarily will enable the surgeon to perform the operation for the removal of renal calculi with the least possible injury to the kidney, and to determine its exact position just before the operation; dispensing with bringing the kidney structure to the surface of the wound, with a limited incision made directly over the stone through the pelvis. Operation should be performed as soon as diagnosis is made.

In very fat patients where an x-ray examination is desired for kidney stones, in order to bring the kidney as near the plate as possible to give the sharpest outline to the stone, it is necessary to use an arrangement called a compression diaphragm ; when pressed down, carrying the tube with it, the distance is reduced, and when down as far as the patient can with some discomfort stand it, and clamped in place, the exposure is made. In order to obtain the best results for diagnosis of kidney stone it is essential that no food be allowed for twenty-four hours previous to the appointment with the radiographer ; the bowels should be briskly purged, and an absolute evacuation of the colon, rectum and bladder be secured; if possible, that condition which is called the "ribbon" condition of the whole alimentary tract obtained.

After considerable search of this subject matter among different authorities, I find that the consensus of opinion is that the absolute or negative diagnosis of the presence of renal stones, no matter what size or what degree of translucence the stone may have, is only a matter of the proper and scientific application of the x-ray, which will tell the exact location.

Positive diagnosis has been reported of ureteral calculi; very often the catheterization of the ureter with the flexible metal catheter is used as an aid in localization. Both in the pelvis of the kidney and in the ureter a stone may be found; owing to the ureter's position on entering the bladder, which brings it below the brim of the pelvis, especially in locating stones or stricture, the ureteral bougie is valuable, as the metal bougie is of greater opaqueness than the pelvic bones.

Cholelithiasis or biliary calculi.—Owing to their chemical composition, and as the liver and gallduct are situated so close to the ribs, and the thorax in constant motion, radiographs of this condition are unsatisfactory. Dr. Leonard reports a case of distended gallbladder which contained seven stones coalescent in one compact mass.

Nephritic calculi in the bladder, or the formation of stones in the bladder due to accumulated urine and consisting of uric acid, are usually very dense and hard, and allow good diagnostic pictures when the proper technique is used.

Prostatic calculi are difficult to locate and to differentiate from vesical, except that the vesical may move in the bladder, while a prostatic stone is stationary.

The study and diagnosis of diseased conditions of the soft tissues, especially the contents of the thorax, abdomen and pelvis, is especially interesting. In the esophagus may be found fistula, diverticula and cystic growths, which do not allow good x-ray examinations for diagnosis unless the mucosa is outlined by some substance which will show and be opaque. Antrums and sinuses of the cadaver may be forcibly injected by any opaque substance, as metallic mercury, and their position and outline studied.

For this purpose in the diagnosing of all parts of the alimentary canal chemically-pure bismuth subnitrate is the metallic opaque substance usually used. Usually the bismuth does not produce any toxic symptoms, but cases are on record where acute nephritis and other toxic symptoms were developed. It is usually given with bread and milk, oatmeal, or alone. When in the esophagus its outline can be determined by the shadow cast, showing fistula, diverticula and cystic growths; as the meal passes into the stomach its outline will be shown, and, where existing, a stricture or any deviation from the normal in its outline will be shown by the accumulation of the bismuth. Both for

diagnosis and study of the esophagus, stomach, colon and rectum the flexible metal bougie can be used.

With the bismuth meal, dilatations, atony displacements, strictures, fistulae, or any other pathological condition of the alimentary tract can be studied as with the peristaltic movement it passes down through the intestines.

Biliary calculi when passed into the intestines may become encysted.

The diagnosis of all congenital pathological conditions of the alimentary tract can be diagnosed by this method.

Stereo-radiography in the diagnosis of diseases of the bones and other abnormal conditions.—It is particularly advantageous, also, to use this method for diagnosis in the softer parts. The advantages are: when used in bone diagnosis, as in periostitis, there is change in the bone outline, due to a thickening of the periosteum; in osteo-myelitis, where there is softening of the bone substance, a lighter shadow is shown; or the presence of a sequestrum by the darker shadow surrounded by a zone of light. In syphilitic degenerations, tubercular, rachitic exostosis, enchondroma, arthritis deformans, in coxalgia, Paget's disease, periosteal sarcoma; all these and many others can be diagnosed to advantage by the stereo method, and any and all diseased conditions can be compared with the normal.

In the softer parts, as the contents of the thorax, the normal lung with its characteristic brightness of color, any diminution is viewed with suspicion; miliary tuberculosis, with its mottled universal darkened spots; localized infection, with its confined darkened area; the movement of the normal diaphragm, which, when lessened at any point, is pathognomonic of a pathological condition of the lungs or some other contents of the thorax. The change in color in bronchitis, in emphysema, in advanced tuberculosis where there are areas of consolidation or an area of consolidation with a cavity in its center and shown by the lighter center. In pleuritic effusions, where displacement of the heart occurs, as well as the change in the line of shadow when the patient is put in different positions; atelectasis, gangrene, empyema and other conditions of the lungs can be diagnosed by the x-ray.

Knowing the exact location of the heart, it is easy to determine any pathological size or position, such as atrophy, hypertrophy, dilatation, pericardial effusions.

The study and diagnosis of aneurisms can be made; position, size and pulsation; they are divided into two classes, idiopathic and traumatic, and may be circumscribed or diffused. The contents of the sac vary according to the stage of the disease; in the first stage it contains only blood, the second stage is characterized by thickened walls with a layer of fibrin around the inside, which will vary in thickness in different parts of the sac; on the extreme outside next to the muscular tissue the layer of fibrin is dry, friable and opaque. The pulsation of an aortic aneurism is distinct, expansile and synchronous with the action of the heart. If of sufficient size to impinge on either the vertebrae behind or the sternum in front; by the continual pressure of its hard, fibrous wall it will produce necrosis of the bones with which it comes in contact. If upon the trachea, respiration is difficult; if on the esophagus, deglutition is difficult; and, due to the muscular action of the esophagus trying to force food past the point, a sacculated or pouched condition may arise. Mediastinal growths and aneurisms are to be differentiated one from the other; the mediastinal are usually circumscribed, and the whole mass moves as a unit with the heart's action. The aorta may be displaced, dilatation and malignant growths may be on or within it.

The normal position of the stomach.—It is conical, turned to the left side, lying beneath the liver and diaphragm, and above the transverse colon. The normal position can be outlined as above described, and, where the movements of the intestinal canal are to be studied, instead of the bismuth meal a ball of bismuth surrounded by some indigestible envelope can be followed completely through the canal.

The diagnosis of stenosis of the pyloric orifice can be made by the accumulation of the bismuth at this point, or knowing the exact time it takes a certain amount of bismuth to pass a given point, or knowing about how long it usually takes a certain prescribed meal to pass into the intestines. Where there is any obstruction in the intestinal tract the accumulation of bismuth is characteristic.

Where the colon or rectum is to be diagnosed independently by the application of either the metal sound or the bismuth meal only, this is incorporated with some oil as a vehicle and carried as high as the sigmoid, with the patient in the genupectoral position.

As I have said before, our work in this field is crude, and there are few medical journals which give out to the men working in this field the benefit of their experimentation; in fact, there are few writers who will devote time to the development of new possibilities and tell us what they are. In every other field there are voluminous publications on every subject pertaining to medicine or surgery, but in this field very little.

Instantaneous radiography is necessary where the parts are in constant motion, and I believe that in time all forms of diagnostic work will be done in the quickest possible space of time. At the present day the slower exposure gives us the greatest detail.

In making an exposure one must prepare the patient so that the tube, plate and patient are in the best relation to show the condition, which at all times must be remembered is a shadow; distortion must be recognized, as the pictured parts are larger than normal. In compound fractures great asepsis must be maintained. Immobility of the parts is very essential. Nothing to interfere with the rays showing the condition must be in the way, such as splints, etc. Plaster casts, if not too thick, can be allowed on the part, which necessitates a longer exposure.

Children and the insane must, where uncontrollable, be anesthetized.

Where there is considerable inconvenience to the patient, on being placed in the proper position to get a picture by quick work, a diagnosis can be made.

The development of this discovery invites the attention of our best men, and we are getting better results as each day passes. Advancement is being made in diseases treated with it and the results noted; new methods of using this discovery in the field of surgery are being brought forward. Hand in hand with that wonderful and newly-discovered substance, radium, which has been used only a short time, we foresee many wonderful achievements.

Dr. Borden said that the paper had embraced many features of a large specialty. Everybody recognizes the great value of the x-ray in diagnosis, but its greatest value is secured only when it is employed by skillful men and when proper interpretation is made of the findings. It is too common an occurrence that x-ray evidence in court may be subversive of justice because false interpretation of radiographs is made to the jury. The use

of such evidence in court, therefore, may be dangerous; and if we would avoid miscarriages of justice which may involve either patient or practitioner, the x-ray should be used for this purpose and interpreted only by specially trained men. Radiographs may easily exaggerate; and this is especially so as regards functional disability as deduced from the amount of bony deformity shown in the x-ray picture. Just as a practitioner is not required to exhibit to the patient all his records of the case, so x-ray plates should be the property of the physician, and should not pass into the hands of the patient without the physician's consent.

Dr. A. F. A. King spoke of the dreadful effects of the x-ray upon radiographers; he had seen a student at the University of Vermont who, after working with the x-ray, has lost one finger after another, and now is said to have malignant disease in the axilla. Recently Dr. King had read in the *Lancet* of another such case. It seems that it may not be foretold who may thus be affected; some individuals have greater susceptibility than others. It seemed to him very curious that in this electrical emanation we have an agency which may be used to treat cancer, but which itself possesses the power to cause cancer. In making x-ray pictures of the skull, what effect does the ray have on the brain? If these radiations are so energetically active upon the skin, why should they not also affect the nervous tissues?

Dr. Lochboehler cited some cases in which the x-ray had aided materially in diagnosis. He agreed that x-ray work should be done only by skilled men.

Dr. Staples thanked the speakers for their remarks. His whole paper had been directed toward emphasizing the necessity of placing radiography in the hands of specialists in that line of work.

A Complimentary Notice.—Dumas one day dined at the house of Dr. Gistal, a celebrity of Marseilles. After dinner the good Doctor brought his distinguished guest an autograph album and asked him to add his name to it. "Certainly," said Dumas, and he wrote: "Since the famous Dr. Gistal began to practice here they have demolished the hospital—" "Flattery!" cried the delighted Doctor. "And on its site made a cemetery," added the author.

THE WRITTEN LAW IN REFERENCE TO THE UNBORN CHILD.*

By MARY PARSONS, M. D.,

Washington, D. C.

According to a recent translation the former rendering of a familiar text of scripture has been changed to read as follows:

"In the beginning was the Law, and the Law was with God, and the Law was God," which makes clear an otherwise obscure passage.

The first recorded law on the subject of this paper is given in Exodus, 20th chapter, 13th verse, and was originally engraved upon a tablet of stone. It reads: "Thou shalt not kill."

The second Hebraic law is also in Exodus, 21st chapter, 22d to 25th verses: "If men strive and hurt a woman with child so her fruit depart from her, and yet no mischief follow, he shall be surely punished according as the woman's husband shall lay upon him, and he shall pay as the judges determine. And if any mischief follow then shall he give life for life, eye for eye, tooth for tooth, hand for hand, foot for foot, burning for burning, wound for wound, stripe for stripe."

In classic antiquity abortion and feticide were permitted and freely practiced. Under the old Roman law no record appears that either offender was punished as a criminal until the third century of the Christian era. Later still the ancient German law prohibited the induction of abortion and punished abortionists.

The Caroline Code of France prescribed capital punishment for convicted culprits—a man by the sword, a woman by drowning.

According to Draper, abortion is still permitted in half-civilized Eastern nations.

In Persia, where deliveries at term out of wedlock are punishable by death, all pregnancies of this sort are brought to an end at an earlier stage by artificial means. Strickler and Short relate the same fact among the East Indians.

Abortion is practiced also in Turkey upon such an extensive scale as to be regarded as one of the causes of a steadily diminishing population. Pardo states that at Constantinople in the space of six months three thousand cases of induced abortion came to

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public notice; while in the Fiji Islands the practice of abortion has long prevailed extensively—the heathen women thus emulating their Christian sisters.

Abortion as a crime, it has been said, is to be found only in modern statutes, no trace of it being found in ancient common-law writers (State *vs.* Cooper).

According to Cyclopedia of Law and Procedure, "The word miscarriage is often used as synonymous with and equivalent to abortion, and has been applied to the expulsion of the fetus from the womb at any time during the period of gestation. But when used in reference to pregnancy miscarriage signifies, in the strict medical sense, an expulsion of the fetus within the first six weeks after conception—according to the statutes of California, Colorado, Iowa, Massachusetts, Minnesota, New Jersey, New York, Ohio and Pennsylvania."

In the Supreme Court of Pennsylvania, in Mills *vs.* Cone, the court observed: "It is a flagrant crime at common law to procure the miscarriage or abortion of the woman, because it interferes with and violates the mysteries of nature in that process by which the human race is propagated and continued. It is a crime against nature which obstructs the fountain of life, and therefore it is punished. The only error assigned is that it ought to have been charged in the count that the woman had become quick. But although it has been so held in Massachusetts and some other States, it is not, I apprehend, the law in Pennsylvania, and never ought to have been the law anywhere. It is not the murder of the living child which constitutes the offense, but the destruction of gestation by wicked means and against nature. The moment the womb is instinct with embryo life and gestation has begun, the crime may be perpetrated." (Page 187, par. 2.)

The Supreme Court of North Carolina, following the doctrine of the case just quoted, said in reference to the above extract: "This enunciation of the law, so careful and distinct in expression, dispenses with the necessity for further discussion" (State *vs.* Stagle).

To the same effect is Commonwealth *vs.* Denman, Pennsylvania. And Bishop observes, in regard to the same language: "This, in principle, seems to be the reasonable and just doctrine."

Under the statutes of most of the States it is immaterial whether the woman be quick with child or not—the criminal act being complete if done at any time during the pregnancy (State *vs.* Fitzgerald, Iowa; Wilson *vs.* State, Ohio; Comm. *vs.* Tebbets, Mass.; Comm. *vs.* Taylor, Mass.; Comm. *vs.* Wood, Mass.).

In this latter case the court was inclined to the view that an indictment on Massachusetts Statute (page 1845) for procuring a miscarriage could not be maintained if the fetus had previously lost its vitality, so that it could never have matured into a living child; but under the Vermont statute it is not essential that the fetus should be alive at the time the attempt at abortion is made (State *vs.* Howard. See also State *vs.* Stewart, Iowa; Comm. *vs.* Grover, Mass.; Eckhardt *vs.* People, New York).

The production of an abortion implies a criminal intent. Where an act is unlawful in itself proof of justification must be shown by the defendant, and if it shall fail in this, the law implies a criminal act (Scott *vs.* People, Ill.; Dougherty *vs.* People, Colorado; State *vs.* Glass, Oregon).

The means denounced by the various statutes are the unlawful or malicious supplying or administering to a pregnant woman, or causing, or procuring to be taken by her, any drug, poison, substance or noxious thing; or unlawfully using, or causing to be used, any instrument or other method whatsoever with intent to procure or cause an abortion.

But under the New Jersey statutes it is not necessary to aver that the poison, drug, etc., advised to be taken was actually taken, or swallowed, nor is it necessary to prove it on the trial, as the *advising* to take the poison is the overt act made criminal by the statute (State *vs.* Murphy, N. J.; also, State *vs.* Hyer, N. J.).

If a drug is dangerous to a pregnant woman it is held to be a noxious thing (Dougherty *vs.* People, Colorado). In State *vs.* Gedicke, N. J., Judge Scudder delivering the opinion said: "The poison, drug, medicine or other thing must be noxious in itself. If it possesses this quality and is administered, prescribed, advised or directed to be taken with the intent to cause or procure a miscarriage when the woman is pregnant with child, the crime is complete whether in the opinion of others it is capable of producing the result or not."

When the accused was charged with having administered saf-

fron with the intent to procure abortion, evidence of the innoxious nature of the article was held to be immaterial—it is with the intent that the jury has to do, and if the prisoner administered a bit of bread merely, with the intent to procure abortion, it is sufficient (Rex *vs.* Cox). In Rex *vs.* Phillips the court, by Lawrence, said: "It is immaterial whether the shrub was savin or not, or whether it was capable of procuring an abortion * * * if the prisoner at the time believed that it would procure an abortion and administered it with that intent in the case" (Rex *vs.* Goodall). It was not even held necessary to constitute the offense that the woman should in fact be pregnant at the time (State *vs.* Moore, Iowa; People *vs.* Lohman, N. Y.; State *vs.* Stagle, North Carolina).

Advising a woman to take a drug with intent to procure abortion may under the provision of some statutes constitute a criminal offense, but it is not necessary, it seems, to the consummation of the offense that the woman should actually take the drug. Failure of the attempt has no bearing in such cases upon the guilt of the defendant.

Under the statutes of many of the States the drug or substance need not be effectual in causing an abortion, it being only necessary that the accused should believe it to be effectual (State *vs.* Fitzgerald, Iowa; Dougherty *vs.* People, Colorado; Comm. *vs.* Morrison, Mass.).

The criminal intention is the main consideration (State *vs.* Owens, Minn.). The guilt is not determined by the success or failure of the effort (State *vs.* Reed, Arkansas; Slattery *vs.* People, Ill.; Scoll *vs.* People, Ill.; Bassett *vs.* State, Indiana; State *vs.* Fitzgerald, Iowa; Smith *vs.* State, Maine; Comm. *vs.* Taylor, Mass.; State *vs.* Murphy, N. J.; State *vs.* Cooper, N. J.; State *vs.* Gedicke, N. J.; State *vs.* Stagle, North Carolina).

State *vs.* Murphy, N. J.; there is a statute providing that any person who, with intent thereby to procure the miscarriage of a woman, advises her to take any drug or substance, is guilty of an abortion. Failure of the attempt has no bearing in such cases upon the guilt of the defendant, as the actual producing of a miscarriage is unnecessary to the consummation of the offense (Maine, Smith *vs.* State; Comm. *vs.* Bangs, Mass.; State *vs.* Owens, Minnesota; State *vs.* Owens, N. J.; State *vs.* Murphy, N. J.; State *vs.* Cooper, Texas; Willingham *vs.* State, Texas; Dough-

erty *vs.* People, Colorado; State *vs.* Moorhart, Iowa; Williams *vs.* State, Texas; Scoll *vs.* People, Ill.; State *vs.* Reed, Arkansas). When an act is unlawful in itself proof of justification must be shown by the defendant, and if he should fail in this, the law implies a criminal intent (Scott *vs.* People, Ill.; Dougherty *vs.* People, Colorado; State *vs.* Glass, Oregon).

Under statutes prohibiting abortions unless the same shall have been advised by two physicians to save the mother's life, the fact that the abortion was actually advised by two physicians to save the mother's life will constitute a valid defense; but the fact that one of the defendants being a physician deemed it necessary to perform an abortion to save the woman's life, is no defense.

The consent of the woman to the production of the abortion is no defense of the person producing or attempting to produce it.

The desire of the defendant to screen the woman and himself from disgrace constitutes no defense.

That the production of the abortion was necessary to save the mother's life can always be shown by way of defense, but that it was produced to prevent the mother from committing suicide is not a defense.

Under the statutes anyone who unlawfully or maliciously supplies or administers to a pregnant woman, or causes or procures to be taken by her, any drug, poison, substance or noxious thing, or unlawfully uses or causes to be used any instrument or other means whatsoever, with intent to procure or cause an abortion, is a principal.

Any person who aids, abets or assists the woman or any other person to procure an abortion is an accessory or accomplice. It is essential, however, that the person so acting have knowledge that the object of the person whom he assists is to procure an abortion (Wharton's Criminal Evidence).

One who encourages and acquiesces in the criminal act is an accomplice (Wilson *vs.* State, Texas; Moore *vs.* State, Texas).

In England, according to the Victorian code, any person who commits an abortion on herself is equally guilty with the person who commits an abortion on another, and is subject to the same punishment.

The woman is an accomplice, provided she submits willingly to the operation, but is not an accomplice if fraud or force is used (People *vs.* Josselyn, California).

The Ohio Rev. Statutes punishes the woman as an aider and abettor if she voluntarily participates in the unlawful act. The fact that the abortion was committed by the solicitation or consent of the woman does not in the slightest degree lessen the criminality of the act after it has been proved (Comm. *vs.* Snow; Comm. *vs.* Wood).

In Texas any person who furnishes the means for procuring an abortion, knowing the purpose intended, is guilty as an accomplice.

Non-pregnancy is no defense either in England or the United States (State *vs.* Howard, Vermont; Comm. *vs.* Wood, Mass.; Wilson *vs.* State, Ohio; Power *vs.* State, N. J.; Comm. *vs.* Taylor, Mass.; Comm. *vs.* Tebbets, Mass.; Comm. *vs.* Follansby, Mass.).

Under the Indiana Revised Statutes it is provided that when an offense is committed partly in one county and partly in another the courts of either may take jurisdiction; the courts of the county in which the operation for abortion is performed have jurisdiction, as have also the courts of the county in which the woman miscarries or dies.

Cameron, according to Witthaus and Becker, says that it has been estimated that a fatal result occurs in seventy-nine per cent. of all criminal abortions.

In Maine, "If the death of the mother results from an attempt to destroy the child after it has become quick in its mother's womb, it is murder, but if death results from a miscarriage prior to the quickening of the child it is manslaughter" (Smith *vs.* State).

Under the Illinois statutes, if death is caused by producing abortion it is murder (Beasly *vs.* People, Ill).

The Kansas statutes make the administration of drugs to a pregnant woman for the purpose of procuring an abortion manslaughter in the second degree.

Under the Massachusetts statutes, "Whoever, with intent to procure the miscarriage of a woman, unlawfully administers to her, or causes to be taken by her, any poison, drug, medicine or other noxious thing, or unlawfully uses any instrument or other means whatsoever with the like intent, or with like intent aids or assists therein, shall, if the woman dies in consequence thereof, be imprisoned in the State's prison not exceeding twenty, nor

less than five years; and if the woman does not die thereof, shall be punished by imprisonment in the State's prison not exceeding seven years, nor less than one year, and by fine not exceeding two thousand dollars."

The District Code reads: "Whoever, with intent to procure the miscarriage of any woman, prescribes or administers to her any medicine, drug or substance whatever, or with like intent uses any instrument or means, unless when necessary to preserve her life or health, and under the direction of a competent licensed practitioner of medicine, shall be imprisoned for not more than five years; or, if the woman or her child dies in consequence of such act, by imprisonment for not less than three nor more than twenty years."

I will end as I began: "In the beginning was the Law, and the Law was with God, and the Law was God;" only adding the words of old Sojourner Truth, "Don' ye forgit, chillin, God aint daid."

Dr. H. D. Fry said that Dr. Parsons had written upon a very important subject. The present-day situation as regards the rights of the unborn child needs remedying; if existing laws were enforced some improvement might be effected, but the difficulty of convicting under the charge of abortion is notorious. It is an open question whether any good can be accomplished by education of the public with the hope of creating a more healthy public sentiment upon the criminality of feticide and of spreading conviction as to the danger residing in the production of abortion. It is significant that criminal abortions are said to be procured more often by married women than by unmarried ones; that the crime is perpetrated as much because it is too much trouble to rear legitimate children as because of the desire to escape the disgrace of bearing illegitimate children.

Women frequently seek to subtly tempt the physician to produce abortion by stating that some other physician has told them that their condition was such in a previous pregnancy that they should never bear children again. On this account it is a question whether such advice ought ever be given when therapeutic abortion is induced in hyperemesis or other conditions; subsequent pregnancies may be successfully accomplished, and abortion should never be induced on the strength of past experience. The textbooks are too liberal as to the indications for therapeutic abortion. In cases of retroverted, incarcerated uterus, for instance, efforts to release the incarcerated uterus failing, the books advise emptying the uterus. He believed that abortion is not

then justified; the proper procedure should be to open the abdomen and replace the uterus; this will not always interrupt the pregnancy, and the uterus is restored to proper position for subsequent pregnancies. So, also, in cases of contracted pelvis; here the pregnancy should be allowed to go to term and elective Caesarean section done, at which time the woman should be sterilized. Otherwise, not only will the child be lost but the woman will afterwards be repeatedly impregnated and abortions will repeatedly have to be induced.

Dr. Kober expressed his appreciation of Dr. Parsons' excellent paper. When we study the birth rates of different nationalities it behooves us to take notice that the American birth rate is now among the lowest in the world. This is not caused by degeneration of the physical qualities of the people; these qualities in America are superior to those of all other nations. Our diminished birth rate is due to criminal intent. Education of the public on this question is most important and urgently needed, and education should especially be directed toward arousing a public conscience strong enough to condemn the practice.

It has been recognized that venereal diseases are also quite prevalent among Anglo-Saxons, and this is another cause of the diminishing birth rate in this country.

Dr. E. L. Morgan said that the method to be pursued in educating the public in matters of this sort is difficult to determine. Again, education would be resisted, because the people do not want to learn. Do not physicians even direct patients to places where the services of abortionists may be obtained? And are not members of juries before which trials of abortionists are heard apt themselves to be the patrons of abortionists?

Dr. Lochboehler said that the sociological aspect of the problem was one for the great public to consider and solve; but as for the medical problem, the command, "Thou shalt not kill," should prevail. Let pregnancies go on to term, and then overcome the dangers of obstructive conditions by section.

Dr. Parsons said that in the main she agreed with what Dr. Fry had said. In looking up the law upon the subject in hand she had been surprised to find how full and complete it is. In many points this was a revelation to her, and was one reason for presenting the paper, as she felt that many of the younger members of the Society might be even less informed on the subject than she had been. She had been much shocked at having been unable to find anywhere a record of any law bearing upon the abandonment of infants. In other words, any woman who can scrape together $200.00 can deliberately leave her child in an orphan asylum, and thus escape all responsibility for its future welfare. And the pity of it is that most of these orphan asylums are founded and maintained in the name of the Christ.

CASE OF EPITHELIOMA OF ESOPHAGUS.*

By WALTER VAN SWEARINGEN, M. D.,

Washington, D. C.

T. W., male, age 69, entered hospital Nov. 27, 1909. Family history and past history unimportant. He first noticed trouble about two weeks ago, when he regurgitated food and drink immediately after taking it; had considerable nausea but no pain. Prior to this had had no symptoms at all except some loss of weight. Since then all food has been immediately regurgitated. Physical examination negative, except marked emaciation. Dr. W. F. M. Sowers attempted to pass a stomach tube, but met with resistance about 40 cm. from upper incisor teeth and was unable to get the tube into the stomach. The diagnosis was stricture of esophagus at cardiac end of stomach, with consequent dilatation of esophagus. An x-ray was made after giving one ounce of bismuth subnitrate in a glass of milk; this picture bore out the diagnosis pretty well. His urine showed casts, but no albumin; leucocyte count, 9,100.

Rectal feeding was tried, but with little success; the injection nearly always was immediately expelled. He became weaker. December 10th Dr. Sowers did a gastrostomy under cocaine. Rectal feeding was continued, with the addition of normal salt enemas and stimulation, but patient died on the 13th.

Autopsy Report.—Pupils, nose, ears and teeth normal. No glandular enlargements and no surface markings except operative wound in epigastrium and several old scars on shins. Chest resonant throughout, abdomen tympanitic and boat-shaped; costal angle about 90 degrees. No excess of fluid in abdominal cavity; intestines moist and glistening and free from adhesions. Small quantity of bloody fluid in each pleural cavity. Pericardium normal. Heart small, flabby, anemic; valves normal, except aortic, which showed calcareous deposits on inner surface. Coronary arteries markedly sclerotic. Aorta somewhat dilated. Calcareous mediastinal gland. In esophagus, 34 cm. from mouth, opposite xiphoid appendix, was a mass completely blocking the canal for all solids, although fluids could possibly trickle through; the mass was more or less necrotic; a small rupture in

* Reported, with specimen, to the Medical Society, February 16, 1910.

it, probably done in removing it. Lungs showed hypostatic congestion and edema; several small healed tubercles in each. Liver apparently normal. Spleen small and firm; its surface covered with small white areas resembling miliary tubercles; on section showed interstitial splenitis. Kidneys smaller than normal; on section showed diffuse nephritis. Bladder and intestines normal.

On finding healed tubercles in the lungs and tubercles in the spleen and a large calcareous mediastinal gland, it was thought that possibly the growth in the esophagus was tubercular, but microscopic sections proved it to be an epithelioma.

Dr. Balloch said that the case had been of much clinical interest. The diagnosis was evident; the most prominent symptoms being extreme emaciation, dysphagia with regurgitation, and the obstruction met by the esophageal bougie. No operation directed against the neoplasm was practicable; a gastrostomy was done to allow of feeding, but this did not long avail.

CASE OF SARCOMA OF LIVER AND STOMACH.*

By WALTER VAN SWEARINGEN, M. D.,

Washington, D. C.

M. B., female, age 60, entered hospital November 24, 1909. Her father died from old age; her mother, age unknown, from heart disease and a tumor in the abdomen; nature of tumor unknown; it may possibly have some bearing on this tumor, from a hereditary standpoint. Patient had two sisters, one brother, four sons and five daughters, alive and healthy. Past history negative except that at times she had swelling of the ankles and obstinate constipation. About two months ago she had a sharp cutting pain in right upper abdominal region, which was relieved by cathartics; two weeks after this she had another attack of pain, this time on her left side; this also was relieved by cathartics. At this time she had marked swelling of abdomen and limbs. On examination at the hospital, a large mass occupying almost entire abdomen could be made out. Six days after admission Dr. E. A. Balloch made an exploratory incision and

* Reported, with specimen, to the Medical Society, February 17, 1910.

found a very much enlarged liver; not nodular; surface smooth and extended almost to the crests of the ilia. He diagnosed the condition as inoperable carcinoma and closed the abdomen. The patient's urine had been negative and the leucocyte count 11,600; stools not examined. From this time she became gradually weaker, and the fourteenth day after operation she died.

Autopsy Findings.—Pupils dilated, sclera slightly jaundiced. No glandular enlargements or surface markings found on body except the operative wound. Chest barrel-shaped, hyper-resonant on percussion. Breasts very flat. Costal angle about 100 degrees. Abdomen large and distended; edema of both legs. Superficial abdominal fat, very small in quantity; considerable amber-colored fluid in cavity. Liver 14 cm. below costal margin in right mammary line, 12½ cm. below tip of ensiform and 9 cm. below costal margin in left mammary line. Intestines distended and free from adhesions. Diaphragm extended up to upper border of fourth rib, considerably higher than normal, on the right side, and upper border of sixth rib on left side, also higher than normal. Liver adherent anteriorly and posteriorly, and to diaphragm superiorly. Ribs very much thinner than normal, due to pressure of liver. Considerable fluid in right pleural cavity, less in left. Both lungs showed hypostatic congestion and edema. Heart normal. Stomach infantile in position, being pushed that way by the liver; contained a mass the size of a goose egg growing from posterior wall, midway between pylorus and cardiac ends, and projecting into stomach cavity. Liver *extremely* large, adherent to stomach, diaphragm and part of duodenum. In right lobe was a large cyst, size of fetal head, containing about 500 cc. of bile-like fluid; walls of cyst degenerated, worm-eaten and in some places lobulated; lower portion of wall showed definite malignancy; the whole malignant area was about the size of an adult head. Remainder of liver showed no malignancy, but chronic passive congestion with fatty degeneration. Five stones in gallbladder; duct patent. Kidneys showed chronic passive congestion.

No other metastases were found in the body. I feel considerable interest in the question of which tumor was primary, that of the stomach or liver; statistics favor the stomach, but present appearances the liver. Microscopic examination of tumors showed spindle-celled sarcoma in both liver and stomach.

Dr. D. S. Lamb said that the question of priority of origin of the tumors was interesting; the gastric tumor was probably primary, the disease being transmitted to the liver by way of the blood stream; and this seemed probable, notwithstanding the fact that the liver tumor was larger and already degenerating.

Dr. Balloch had been surprised to hear that the histological examination of the specimen showed it to be sarcoma; the pathologists say that primary sarcoma of the stomach is very rare.

Dr. Carr said that the size of a tumor is no proof of its age. Many primary sarcomata may be stationary in size, while secondary growths may be very much larger.

Dr. D. S. Lamb said that Dr. Carr's statement was true also of cancers of the stomach.

PNEUMONIA; ANALYSIS OF FORTY CONSECUTIVE CASES.*

By HENRY P. PARKER, M. D.,

Washington, D. C.

These cases were seen at the Freedmen's Hospital, Washington, either by me or Dr. Burbank, or by both of us.

Total deaths, 8; recoveries, 32; death rate equals 20 per cent. Sex: male, 29; female, 11.

Age.	Cases.	Recoveries.	Deaths.
10–20	11	11	0
20–30	14	13	1
30–40	6	3	3
40–50	7	4	3
50–60	No cases.	. . .	. . .
60–70	2	1	1

Of these patients one was admitted moribund, dying in two hours. Only one death in twenty-five cases under thirty years of age. Two others died within two days after admission, being desperately ill on admission. Of the cases recovered one was admitted during the fall of temperature, two were admitted after the crisis.

* Read before the Medical Society, March 16, 1910.

Occupation (males): Laborers, 15; drivers, 4; school boys, 2; butchers, 2; junk dealer, 1; stable man, 1; barber, 1; manager, 1; not given, 2.

Occupation (females): Domestic and housework, 7; school girls, 3; seamstress, 1.

Stay in hospital: This varied from three hours, in the patient admitted moribund, to 56 days in a case of unresolved pneumonia. The average stay was 17 days.

Complaint: The patient's complaint was noted in 35 cases; in 5 it was not. Pain in side and chest, 27; cough, 12; headache, 8; severe cold, 6; fever, 6; weakness, 4; shortness of breath, 4; pains in stomach, 3; pains in limbs and back, 2; blood spitting, 2; chills, 1; foul stomach, 1; hemorrhages from nose and stomach, 1; diarrhea and vomiting, 1; drowsiness, 1; nose bleed, 1; and thirst, 1.

Family history: This was noted in 38 cases, being unimportant in all; and 2 cases were not noted.

Contagion, one case: Two brothers sleeping in the same room in the same bed; one took sick with pneumonia December 20th, the second with the same disease December 25th.

Previous history as to pneumonia: 7 cases had had one attack; 27 had had no previous attack. History not noted in 6 cases.

Habits as to alcohol: Hard drinkers, 8; 5 recovered; 3 deaths. Moderate drinkers, 19; 16 recoveries, 3 deaths. Abstainers, 8 recoveries (all young adults). No history regarding alcohol in 6 cases; death in 2 and recovery in 4.

Symptoms. *Onset.*—Noted in 37 cases, not noted in 3. The onset was sudden in 34, gradual in 3 cases. The main symptoms at onset were: Chill in 20 cases, cough in 10, fever in 17, pain in side in 24, abdominal pain in 2, headache in 7, nausea and vomiting in 2, epistaxis in 2.

Course.—The main symptoms in the course of the disease were noted in 37 cases, and not noted in 3. Headache in 13; absent or not noted in 24. Embarrassed respiration present in 26, not present in 2 and not noted in 12. Pain present in 32, not noted in 7, not present in 1. Cough present in 33, not present in 1, not noted in 6. Sputum noted as being blood-stained in 19, not noted in 19, not blood-stained in 2.

Temperature: Below 100 degrees, 2 cases, both recovered. [NOTE.—L. admitted after temperature had fallen; the other

temperature had almost reached normal.] Below 101 degrees, 2 cases, 2 recoveries. Below 102 degrees, 7 cases; 6 recovered, 1 died. Below 103 degrees, 11 cases; 10 recovered, 1 died. Below 104 degrees, 12 cases; 10 recovered, and 2 died. Below 105 degrees, 3 cases; 2 recovered, 1 died. Below 106 degrees, 1 case; 1 died (ante-mortem rise). Temperature not taken, 2 cases; 2 died. The temperature was regular in 27 cases, irregular in 7, not noted in 2. In 4 it was undetermined because of occurrence of fall before or directly after admission.

Duration: 3 days, 1 case; 4 days, 2 cases; 5 days, 2; 6 days, 3; 7 days, 3; 8 days, 2; 9 days, 6; 10 days, 2; 11 days, 1; 13 days, 1; 15 days, 2; 16 days, 2; 17 days, 2; 18 days, 1; 20 days, 1; 30 days, 1. Undetermined, 7 cases.

Long cases: Case 1, 17 days, leucocytes, 25,500; typical physical signs. Case 2, 17 days, possibly enteric. Case 3, 20 days, leucocytes, 20,600; physical signs all present. Case 4, 15 days, temperature fell by crisis. Case 5, 15 days, temperature fell by lysis from 13th to 15th day. Case 6, 30 days, possibly tuberculous. Case 7, 16 days, showed a complicating pericarditis. Case 8, 18 days, showed typical signs of consolidation, lobar in type; the temperature fell by lysis, had a previous history of enteric fever. The temperature was normal for 17 days before discharge. Resolution was far advanced. Patient was well and strong when discharged. Case 9, 32 days, unresolved pneumonia. Case 10, 16 days, patient sick in hospital six days before crisis. History possibly incorrect. All the physical signs of consolidation were present.

Termination of disease: This was by crisis in 17 cases, by lysis in 13; undetermined in 10.

Long cases: Case 4, 15 days, termination by crisis. Case 5, 15 days, termination by lysis from 13th to 15th. Case 7, 16 days, fall by lysis, after fall by crisis on 11th day. Case 9, 16 days, fall by crisis. Case 2, 17 days, death; probably enteric. Case 1, 17 days, fall by lysis. Case 8, 18 days, fall by lysis. Case 3, 20 days, fall by lysis. Case 10, 32 days, fall by lysis. Case 6, 30 days, fall by lysis. Temperature in this case never remained normal. 7 of the 9 cases terminated by lysis. Of the two terminating by crisis, one was probably shorter in duration.

In all the long cases, with the exception of case 6, the temperature remained normal.

Pulse rate: Below 100, 9 cases, no deaths; 1 admitted after crisis and 1 during the crisis. Below 110, 10 cases, 8 recovered, 2 died; 1 on the 17th day, possibly of enteric fever; 1 on the 9th day, of acute dilatation of the heart, after the crisis had been passed. Under 120, 11 cases, all recovered. Under 130, 5 cases, 4 recoveries, 1 death. Under 140, 4 cases, 1 recovery, 3 deaths. Under 160, 1 case, 1 recovery. In convalescence, 1 case showed bradycardia; pulse rate 50 to the minute.

Heart: In 4 cases functional systolic murmur was noted in the mitral area; in 2 cases pericardial rub was heard.

Respirations: Below 30, 5 cases, all recovered. Below 40, 15 cases, 14 recovered, 1 died. Below 50, 14 cases, 12 recovered, 2 died. Over 50, 2 cases, with 2 deaths. Not noted in 4, 1 recovery, 3 deaths.

Physical examination: Expansion of affected side restricted in 24 cases, equal in 8, not noted in 8.

Vocal fremitus: Increased in 21 cases, not increased in 7, decreased in 4, not noted in 7.

Area of consolidation: Noted in 36 cases, not noted in 4. The right lower lobe, 13 cases; right upper lobe, 7; left lower lobe, 5; both lower lobes, 5; right upper and lower lobe, 3; right upper and left lower, 1; left upper and lower, 1; entire right side, 1.

Physical signs. *Percussion.*—Dullness was noted in every case; no hyper-resonance. *Auscultation.*—Tubular breathing present in 31 cases, not noted in 5, absent in 4. Of the cases not showing tubular breathing case 1 had a sudden onset with chill, pain in side, cough, rusty sputum; temperature fell from the 5th to the 7th day by lysis. Case 2, a school boy, 15 years old, had a sudden onset, cough, pain in the side; temperature fell by crisis on 15th day. Case 4, domestic, 20 years old; pain in side and abdomen, cough and blood-stained sputum; the onset was sudden; temperature fell by lysis from the 10th to 13th day. Case 5, school girl, 15 years old, had a sudden onset, headache, nose bleed, fever, vomiting, cough, bloody sputum; temperature, 103 to 105, falling by crisis on 6th day.

Suppression of vesicular murmur at some stage of the disease was noted in 8 cases; in nearly all of these tubular breathing later developed. *Rales:* Crepitant or subcrepitant rales were noted in 35 out of 36 cases. One case where rales was not noted

has been described in the previous section (Case 5); sudden onset, blood-stained sputum. *Pleural friction* was noted 7 times, 3 times on the side opposite the lesion.

Bowels: Diarrhea was noted in 7 cases, constipation in 10. The bowels were normal in 11.

Herpes: 4 cases.

Delirium noted in 7 cases.

The following cases seem of sufficient interest to justify a more detailed account:

CASE 1. *Unresolved Pneumonia.*—Arthur G., aged 18, laborer, was admitted to Freedmen's Hospital Dec. 22, 1908, complaining of pain in the right side and forehead. His family history was negative, except that one brother had pneumonia at the same time. His personal history was negative as regards pneumonia; his habits were good.

Present illness: The patient took sick December 20th, with a chill, which lasted about one hour. After this he had fever and felt very weak. On the day of onset he complained of severe pain in the abdomen, mostly on the right side, and he also had a headache. The pain in the abdomen was present on the admission, but was less severe. He had loss of appetite, bad taste in the mouth and constipation. There was no vomiting. A slight cough was present; the pain in the abdomen was increased on deep inspiration or cough. Examination by Dr. Burbank showed a well-nourished young man, expression dull, tongue coated and breath foul. Palpation showed an increased fremitus over the right apex and upper lobe. Percussion showed dulness in front, extending down to the third rib. In the axilla the resonance extended to the sixth interspace only, and in the back there was dulness to the angle of the scapula. On auscultation there were tubular breathing, bronchophony and fine crepitations over the right upper lobe, both anteriorly and posteriorly. Over the entire base, both in front and behind, were well-marked pleural-friction sounds. The breath sounds were diminished or lost over this area. The left lung was negative, except for a few rales over various areas. There was tenderness over the gallbladder and liver region, but no muscle spasm or mass could be made out. The pulse was regular, 112 to the minute, full and strong. The temperature on admission, 101.8; ran a fairly steady course. Respirations varied from 30 to 45, the pulse from 100 to 80. The

patient presented the appearance of a typical case of lobar pneumonia. January 2 the temperature, which had ranged low, fell to the normal. This was, however, very temporary, the temperature rising on January 3 to 99 and January 4 to 99.6. On this date the following note was made: Resolution has occurred in the right upper lobe. The friction sounds are still heard at the base, but not so strongly. Vocal fremitus is more marked at the right base posteriorly. The voice sounds were not transmitted in this area. January 5 the temperature rose from 99.6, and January 6 and 7 ranged from normal to 101.8 and 102.4, respectively. Respirations from 25 to 30, the pulse as previously noted. January 7 it was noted that the dulness of the right axilla began at the fourth rib, two interspaces higher than on admission. A markedly irregular temperature persisted from this time to January 26, when it began to decline, varying from normal to about 100 degrees. In spite of his continued temperature the boy looked well and strong, and was anxious to get up out of bed. February 1 the following note was made: Expansion of the chest is much more marked on the left side, though there is some movement on the right side in the front and upper axilla; in the back there is marked restriction of movement from the level of the third thoracic vertebra to the base; there is loss of vocal fremitus in the back and axilla in the affected portions. *Percussion:* In the front of chest, below the third rib and beneath the sternum, on a line parallel to it 1 cm. inside the mammary line, there is a most intense crack-pot resonance. Outside of this line the axilla and the back from the second vertebra down are flat. *Auscultation:* At the junction of the second rib and costal cartilage a few fine crackles are heard at the end of inspiration. Over the tympanitic area noted there are neither rales nor tubular breathing. Inspirations in this area are cog-wheeled in character, the expirations somewhat prolonged. The whispered sounds are most intense in this area. In the axilla and back on percussion there is the same area of flatness. The breath sounds here are suppressed or entirely lost. The left lung shows marked expansion, hyperresonance, increased fremitus and greatly-increased breath sounds, showing that it is compensating for the lack of function of the opposite side. These signs persisted, the patient's improvement continued and the temperature remained at the normal, except for a few slight rises. The patient was discharged

well February 16. The same patient was re-examined December 6, 1909, and the following note was made: The patient has a decided droop of the right shoulder. The right side is decidedly flattened above and below the clavicle and in the right axilla. He now expands well on the right side, both in the back and front. On palpation the fremitus is decreased in the right axilla but is present to a considerable degree at the posterior base. *Percussion:* Over the entire right back the axilla has a marked impairment of percussion note. In the front, resonance extends down to the fifth rib in the parasternal line. *Auscultation:* The breath sounds throughout the front and in the back, though diminished, are clearly audible down to the base. From the outer border of the scapula to the anterior axillary line the breath sounds are nearly entirely lost, and in the axilla absolutely lost below the level of the sixth rib.

CASE 2. *Unresolved Pneumonia or Pleural Thickening.*—Julia G., a school girl, 17 years old, was admitted February 27, 1909, complaining of pain in the chest and right side. The family and personal history was unimportant. The present illness began February 18, nine days before admission, with a deep, heavy cold, headache, pain in the side and blood spitting. On admission the temperature, pulse and respiration were normal. Inspection showed decreased motion on the right side; palpation showed the vocal fremitus equal on the two sides but everywhere very slight. Percussion showed a flatness from the fifth rib in the axilla and the fourth thoracic vertebra posteriorly to the base. Auscultation showed a decrease of the breath sound and crackling rales in the axilla. In the back the breath sounds were either absent or decreased except on the inner side of the scapula, where broncho-vesicular breathing was heard. She remained in the hospital twenty-one days, and was discharged March 17, the impairment of percussion note and suppression of breath sounds still being present. The temperature was always normal and the patient was apparently well.

CASE 3. *Unresolved Pneumonia, possibly Tuberculous.*—Edward B., aged 48, driver, was admitted January 25, 1909, complaining of pains in the stomach. The family and personal history was unimportant. The patient was, he said, a moderate drinker. The present illness began January 25 with a severe chill, followed by vomiting and soreness in the chest, which spread to the abdo-

men. The temperature on admission was 100, pulse 90 to 100, respiration 40, sputum distinctly rusty in character. Physical examination showed dulness, distant tubular breathing and crackling rales over the right lower lobe. These signs persisted at discharge. The patient had a fairly steady temperature of from 100 to 102 for thirteen days, with a slight remission on the tenth day. From the thirteenth to the twenty-second day the temperature was very irregular, ranging from 99 to 102. On the twenty-second day it became normal and remained there twenty-four hours, when it rose again, running an irregular though decreased temperature to the day when the patient was discharged, against advice; but he felt well and strong.

CASE 4. *Apical Pneumonia.*—James L., age 60, alcoholic, barber, was first seen in the dispensary, where he had a violent intention tremor and a temperature of 104. On examination at that time there were a few fine crepitations at the right apex and a doubtful prolongation of and high-pitched expiration. He refused to enter the hospital then, but was admitted a week or ten days later, February 4, with subnormal temperature, marked tremor and violent delirium. Physical examination at this time showed a dulness over the right upper lobe, a high-pitched, prolonged expiration and subcrepitant rale. He recovered.

CASE 5.—Frank Q., laborer, aged 18, was admitted January 28, 1909, complaining of pain around the lungs, heavy cold and headache. The family and personal history was unimportant. The present illness began two days before admission, with pain in the chest, followed the next day with severe headache, fever and sweat, but without a chill. There was shortness of breath, with cough, and a thick, tenacious sputum. Physical examination showed slight dilatation of the nostrils on inspiration, and a slight herpetic eruption on the lips and chin. The pulse was 100 to the minute. Examination of the chest showed the expansion equal on the two sides; palpation showed the vocal fremitus absent over the right base. On percussion there was dulness over the entire right lower lobe, but there was no tubular breathing nor rales. The temperature ran a very irregular course, varying from 97 to 103. February 1, five days after admission, typical signs of consolidation, with tubular breathing, were found in the *left posterior* base. On this day the temperature rose to 104, falling February 2 almost to the normal, and reaching normal February 3. *Typical signs of consolidation persisted* only 24 hours.

CASE 6. *Pneumonia with Pericarditis.*—Theodore N., laborer, aged 24, was admitted January 27, complaining of pains in the back and head, with a severe cough. The family history was unimportant. The personal history was unimportant except for typhoid-pneumonia four years previously. The present illness began five days before admission. He took to his bed four days before admission, with headache, vomiting, nose bleed and bloody expectoration. He was a strong, well-built young man and showed the following physical signs: Pulse 108, respiration 36 to the minute; the nostrils dilated with each inspiration. There was decreased expansion on the right side, with increased fremitus, dulness over the lower lobe, tubular breathing and intense whispering pectoriloquy over the same area. On the tenth day the temperature fell by crisis; January 31 and February 1 and 2 it rose to 100, and February 3 reached 102. On this day a pericardial friction rub was heard over the second and third left interspaces. The temperature remained elevated until February 5, and from this day gradually fell, reaching the normal February 7.

CASE 7. *Apical Pneumonia.*—Alice R., aged 11, school girl, was admitted November 28, 1908, complaining of headache, nosebleed and fever. The personal history was negative for pneumonia. The present illness began November 24, with headache, malaise, vomiting, nosebleed and cough; the temperature ranged from 103 to 105, respirations about 35, and there was no dyspnea nor pain. There was no rusty sputum, but two blood clots were spat up. Examination was absolutely negative except for a few rales in the interscapular region. On the night of November 30, two days after admission, the temperature fell by crisis from 105 to 97. On the following day examination showed dulness at the right apex, with subcrepitant rales. Typical tubular breathing was not heard, and the diagnosis was not made until after the crisis. After the crisis the temperature rose December 1 to 103 and December 2 to 101.2, falling from this point to the normal. She had no mental symptoms.

CASE 8. *Apical Pneumonia.*—Haywood P., aged 19, meat dealer, was admitted November 1, 1909, complaining of pain in the side, weakness and thirst. The personal history was negative except for previous pneumonia. The present illness began one day before admission, with fever, weakness, thirst, pain in the side, cough and tenacious sputum. The temperature on ad-

mission was 103, pulse 120 and respirations 30. Examination showed dilatation of the nostrils; herpes was present. The chest showed lessened expansion on the right side, impairment of percussion note and high-pitched prolonged expiration at the right apex. November 7, after the patient's temperature had been normal for three days, the breathing was clearly broncho-vesicular in character, and subcrepitant rales were heard. The temperature fell by crisis and on the fourth day rose; on the fifth day was 102 and then fell to normal.

CASE 9.—James G., laborer, aged 20, was admitted December 28, 1909, complaining of pain in the chest, cough and headache. The personal history was negative for pneumonia. The present illness began December 25, with chill, headache, dizziness, fever, cough and pain in the side. Examination showed decreased expansion in the right infraclavicular region, an increase of the vocal fremitus over the right upper lobe, dulness, tubular breathing, bronchophony and fine crepitations over the same area. The temperature was 103, pulse 120, respirations 35. The temperature ran a steady course and fell by lysis from the sixth to the eighth day. There were no mental symptoms.

Dr. J. D. Thomas said that the paper was of great interest and particularly timely on account of the present prevalence of the disease. In a series of cases, the interest of the reports depends much upon the system used in making examinations and the personal equation of the examiner. He happened to know that Dr. Parker's system is a good one and that his clinical findings are thoroughly reliable.

In considering the etiology of pneumonia it is interesting to note the greater susceptibility of negroes; the reasons of this are clear to those who are familiar with the social conditions under which the negroes live. The contagiousness of the disease had been referred to, but should have received more emphasis. That pneumonia is distinctly contagious has been commented upon very widely of late years and by many writers, and it is a fact that should be impressed upon those who care for pneumonia patients and upon members of families in which the disease exists.

Several cases in the series were complicated with tuberculosis, or seemed to develop tuberculosis as a sequel of the pneumonia. These cases were of interest to Dr. Thomas because he had no doubt that lobar pneumonia is more frequent in the course of tuberculosis than is ordinarily suspected. Acute exacerbations of fever and intensified pulmonary symptoms are frequent in the course of chronic pulmonary tuberculosis, but in such cases the

physical signs are those of acute pneumonia, and the clinical course is the same. It is also to be noted that lobar pneumonia distinctly predisposes to pulmonary tuberculosis.

That lobar pneumonia is a bacteriemia should be emphasized. There have been cases of record in which the pneumococcus has been demonstrated in the blood but in which no physical signs of the disease could be found in the lungs. Such cases have also come to autopsy, and demonstrate that the disease is a general infection of the same type as typhoid fever.

In Dr. Parker's series there had been no case in which the middle lobe alone was involved. These cases are rather rare, but Dr. Thomas had had the good fortune to see several, and they had afforded the opportunity to demonstrate most beautifully the surface relations of this lobe.

Delayed resolution is often the source of much worry to the physician and may occasion some doubt as to the diagnosis. He had recently seen, in consultation with another physician, a child in whose case the consolidation had persisted for several weeks; after the child was put into the open air and allowed some freedom the lung rapidly cleared up. The abdominal signs of pulmonary disease had been very marked in this child, and an operation for appendicitis was actually done. At first glance this might seem to have been a very gross mistake, but the differential diagnosis may be most difficult, especially where the physical signs are slow in coming to the surface, as was the case with this child. He expressed his enjoyment of the paper and complimented the essayist.

Dr. Claytor agreed with Dr. Thomas as to the frequency with which lobar pneumonia may be superposed upon chronic pulmonary tuberculosis. Autovaccination is becoming more widely used in the treatment of cases of delayed resolution. The method is simple and easy of application. The predominant organism is grown from the sputum and a vaccine made in the usual way. He recently had used the method in a case of migratory pneumonia in which after 27 days, resolution had not taken place. After two injections of a vaccine the lung began to clear up. The vaccine was a combination of pneumococci and staphylococci. If this method of treatment continues to prove so beneficial it will add enormously to our armamentarium, not only for the treatment of delayed resolution but throughout the attack. Pneumonia without cough is not often seen in adults, though fairly frequent in children. He had recently seen such a case in an adult, the pneumonia being complicated by pericarditis. He had enjoyed the paper and commended the diligence of the reporters.

Dr. Roy regretted that the respiration-pulse ratio had not been computed and reported in the series. He had found that the prognosis may be considered good when the ratio is 1 to 4 or 1 to 3, but he becomes alarmed when the ratio becomes 1 to 2½;

and his alarm is quite independent of the amount of tissue involved; even massive pneumonia with a good respiration-pulse ratio doing better than cases with small involvement but severe toxemia, which greatly influences the ratio.

Dr. A. F. A. King said that the mortality rate of pneumonia had been given as 20 per cent. Are we never going to be able to do better than that? He had learned that in one of the large hospitals of Philadelphia the mortality had been about 18 per cent.; the explanation given was that the patients entered hospital so late in the disease, or the prevalence of alcoholism was so great, or some other complication operated to offset the benefits of modern methods of treatment. He had been interested in reading Bennett's "Practice of Medicine," an English work published in the early '60s; in this book Bennett inveighed against the prevalent extravagant use of phlebotomy in the treatment of pneumonia, and stated that under his system of management, which consisted for the most part of the administration of wine and saline nutrients, his death rate was only 1 in 34¼ cases, a little over 3 per cent. Of 105 uncomplicated cases, all recovered. Surely, if such results could be obtained at that date, something should be done to improve the present-day results. The open-air method of treatment seemed to Dr. King to be rational. He knew of nothing more annoying than the utter inability to find in the literature any fixed method of treating this disease. He asked Dr. Parker if the urine had been watched for the presence or absence of chlorides? He had formerly been in the habit of giving salt copiously in the food to pneumonia patients, and had thought that the practice did good.

Dr. J. D. Morgan said that Dr. Parker's analysis of these cases had been most interesting. Dr. Morgan had recently had a case of pneumonia in an adult with abdominal pain simulating appendicitis. The patient was a young West Indian who had been admitted to the hospital as a typhoid suspect; there were no subjective signs of pneumonia, but examination of the chest demonstrated an area of consolidation. Dr. Reichelderfer had seen this patient with him, but although the abdominal pain was great and there was tenderness in the appendical region, the diagnosis of appendicitis was abandoned when the consolidation was discovered in the chest. This patient is getting well under the open-air treatment at Garfield Hospital. He remarked for Dr. King's benefit that pneumonia patients under his (Dr. Morgan's) care at that hospital are treated in a tent, and that out of 17 cases 15 have recovered. He believed that the treatment by autovaccination is rational and he hoped for much good from the method.

Dr. Chappell said that frequency of pain in the affected side as an initial sign had been given; but how often is pain in the opposite side encountered as an initial sign? He has had one marked

case of this kind. He has had a number of cases simulating appendicitis. He suggested that the failure to reduce the mortality of the disease may be due to a feebler resistance of the people of today as compared to those of 50 years ago. He complimented Dr. Morgan on his results under the open-air method. Dr. Chappell had only recently been convinced that pneumonia without cough was possible by encountering such a case in his practice.

Dr. Nichols said that *a propos* of the delayed appearance of the physical signs of pneumonia, he had seen cases in which the physical signs could not be demonstrated until after the crisis. In most cases the clinical course and characteristic facies should be sufficient to make the diagnosis. The central location of the pneumonic process is the usual explanation of such cases. Dr. Thomas would classify pneumonia as a general disease with local manifestations; others regard it as a local disease with general manifestations. Dr. Nichols did not regard either classification as very important. If an area of the lung is full of bacteria of one kind or another it is easy to see how they will wander into the blood and will be recoverable therefrom. This does not go to prove that the infection starts in the blood or proliferates there.

Dr. Thomas said that Dr. Nichols could not have correctly apprehended his remarks. He had merely wished to bring out that pneumonia is in some respects a systemic disease.

Dr. Parker thanked the speakers for their remarks. He recognized that the contagiousness of pneumonia should have been emphasized, and he regretted that closer inquiries as to this factor had not been made in the history-taking in his series. Since working up the paper he has had in his service another case in which the history of contagion had been noted. He has been fortunate in that he has seen a number of cases of pneumonia with abdominal symptoms, but there had been no instance of this sort in the series reported. An early massive leucocytosis is an important diagnostic point and speaks loudly for the presence of pneumonia. He had not spoken of the treatment, because he had nothing of importance to add to what is generally known; there had been no facilities for using the out-door method at the Freedmen's Hospital, otherwise he would have employed it. The method of treatment by autovaccination is most interesting and should receive careful trial when possible.

HYPERNEPHROMA OF THE KIDNEY.*

By I. W. BLACKBURN, M. D.,

Government Hospital for the Insane, Washington, D. C.

SYNOPSIS.

Dr. Blackburn presented a paper on Hypernephroma, illustrated by two specimens of the tumor, a histological preparation of a case of adrenal hyperplasia, and a number of photographs and drawings illustrative of the general structure of hypernephromata. Attention was called to the fact that we have in hypernephroma a potentially malignant tumor derived from aberrant, or normal adrenal epithelium, which is of mesoblastic derivation, and that this tumor cannot be placed with either of the two great classes of malignant growths, the carcinomata or sarcomata; and that though at present we have to acknowledge that carcinoma may be derived from all three layers of the blastoderm, yet this tumor differs in important details from the carcinomata; and the resemblance to ordinary sarcoma is still more remote.

It was emphasized that if such tumors exist as a distinct entity they must present certain morphological and histological characteristics which will serve to distinguish them from all other growths, and that these characteristics must be fairly constant so that a diagnosis is possible.

The reasons for regarding hypernephromata as distinct growths and of adrenal origin are as follows:

First. The embryogenesis; which is fairly well established to be from misplaced or ectopic adrenal tissue when these tumors arise elsewhere than in the gland itself.

Second. The resemblance of the tumor elements to the adrenal cells, seen in their morphological and in their degenerative tendencies.

Third. The tendency of the tumor tissue to reproduce the general structure of the adrenal gland, rather than that of either carcinoma or sarcoma.

The tumor occurs most frequently in the kidney, in 97 per cent. of reported cases; and at the same time the hypernephromata are the most common tumors of the kidney. A diagnosis

* Read before the Medical Society, March 16, 1910.

of the growth in operative cases and in secondary growths, especially of the bones when amputation becomes necessary, is of highest importance, as the prognosis and treatment are thereby much modified. The chief points in the diagnosis of the primary tumor are the characteristic appearance of the growth, the non-involvement of the lymph nodes, growth into the renal pelvis, renal vein, vena cava, etc., and the histological characteristics, namely, the resemblance of the cell elements to those of the adrenal gland, the alveolar network of sometimes naked capillaries with palisade rows of cells along their walls, and the microchemical and degenerative character of the cells. The secondary growths preserve to some extent the characteristics of the primary, but marked *local* differences exist.

Attention was called to the different structure of the hypernephromata shown by the descriptions of the several textbooks of pathology; while the work of Kelly was commended as the best guide to the structure of the tumor. The symptomatology was briefly alluded to. Hematuria, sometimes intermittent, sometimes occurring only once, in 75 per cent. of cases. Pain in nineteen out of twenty-six cases (Pfahler). Tumor has been made out in 89 per cent. of cases. The average age of the reported cases is fifty-two years, showing that as a rule the tumor is one of advanced age.

Two cases of renal hypernephromata were given in detail, and one of adrenal hyperplasia with fatty degeneration of the adrenal cells.

Dr. Hagner congratulated Dr. Blackburn upon his paper and specimens, and thanked him for presenting a contribution of such great interest. Dr. Hagner had never seen such beautiful pictures illustrating pathological conditions, and he hoped that they might be published; the characteristics of hypernephroma were portrayed by the pictures in a most remarkable manner.

The rapid and widespread metastases, productive of early death, constitute a feature of especial interest in the clinical course of hypernephroma. He quoted statistical studies which indicate that the tissues invaded by metastases are, in the order of frequency, the lungs, lymph glands and the skin at the scar of the wound through which the original growth was removed: other tissues are less frequently involved. Until recently hypernephroma has been pretty generally classified as sarcoma or carcinoma.

There are often no symptoms of this disease. The tumor may

be quite impalpable, and hematuria is not often noted by the patient unless very marked; colic will not occur unless the ureter becomes obstructed in some way. The operative prognosis is fair if the disease is not far advanced; it is not the most brilliant class of cases, because the proportion of metastatic recurrences is so high.

Dr. J. D. Morgan asked if hypernephroma is not in most cases of fetal origin? He had understood that the tumor arises from fetal structures which take on active and very rapid growth in adult life.

Dr. Blackburn said that it is pretty well conceded that these tumors are of fetal origin; that they arise from misplaced adrenal cells, which take on rapid growth from some unknown cause.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, February 16, 1910.—The President, Dr. Louis Mackall, presided; about 65 members present.

Dr. Kober reported resolutions of respect to the memory of Dr. Thomas Taylor, and Dr. A. A. Snyder reported resolutions of respect to the memory of Dr. Wm. P. Compton, which were adopted by unanimous vote. See pp. 77 and 78.

A letter from the Chairman of Committee on Affiliation, Washington Academy of Sciences, Mr. Bailey Willis, was read, inviting the President and Corresponding Secretary to attend a meeting for the purpose of discussing the desirability of holding joint meetings and discussions of subjects common to two or more societies, the meetings to be under the auspices of the Academy of Sciences. The President and Corresponding Secretary were delegated to represent the Medical Society at the proposed meeting.

Dr. Walter Van Swearingen presented specimens as follows:

(1) Sarcoma of Liver and Stomach; discussed by Drs. D. S. Lamb, Balloch and Carr. See p. 162.

(2) Epithelioma of Esophagus; discussed by Dr. Balloch. See p. 161.

(3) Lobar Pneumonia (gray hepatization).

Lobar Pneumonia.—A. D., female. This case ran the usual course of lobar pneumonia, with cardiac complications, and ended fatally. Autopsy findings, Sept. 23, 1909, were as follows: well-developed middle-aged woman; pupils equal, normal in size. No glandular enlargements; no surface markings except three initials tattooed on her left forearm. Left side of chest dull on per-

cussion throughout almost its entire extent; right side resonant. Abdomen tympanitic; considerable superficial fat; no excess of fluid in cavity. Intestines moist and glistening. Right lung free from adhesions; left lung bound down firmly in almost its entire extent, both anteriorly and posteriorly; pleura considerably congested and showed small quantity of fibrin on its surface. Pericardium contained about 300 cc. of cloudy straw-colored fluid; adherent in some areas by fresh adhesions, both surfaces showing fibrin. Heart normal except the tricuspid valve, the left leaf of which showed a large fresh vegetation, right leaf a smaller one; myocardium rather pale. Right lung normal in appearance; contained air throughout except for three small healed tubercles in its apex. Left lung upper lobe solid to touch and airless; in stage of gray hepatization of lobar pneumonia; lower lobe contained air and not involved; line of demarcation between affected and unaffected portions very sharp. Liver apparently normal. Spleen acutely congested, somewhat enlarged, soft and friable. Kidneys showed mild diffuse nephritis. Other organs of abdomen normal.

Dr. D. S. Lamb said that it was interesting to find in this case the right lung entirely free from disease. Pneumonia in heart disease is usually bilateral.

Dr. Mary A. Parsons read the paper for the evening. Subject: "The Written Law with Reference to the Unborn Child." Discussed by Drs. H. D. Fry, Kober, E. L. Morgan, Lochboehler and Parsons. See p. 153.

Wednesday, February 23.—The President, Dr. Mackall, presided; about 35 members present.

Brigadier General Geo. H. Torney, Surgeon General, U. S. A., was elected a member by invitation.

Dr. Hasbrouck presented a specimen of Adenoma of the Thyroid, with report of the case.

Dr. T. C. Smith asked for information as to the mortality after operations upon the thyroid gland. He was aware that surgery of the thyroid in exophthalmic goiter was attended with much danger, but wished precise information as to the risks attending interference in more simple conditions.

Dr. W. P. Carr said that mortality after removal of small tumors of the thyroid is practically *nil;* and after removal of simple goiter the death rate should not be above 1 per cent. The death rate following extirpation of the thyroid for exophthalmic goiter has been until recently very high; the Mayos have recently reported a mortality of only 5 per cent. in 300 cases, the improvement being due largely to the use of ether anesthesia instead of local anesthesia, and a minimum of handling of the tissues. Hemorrhage need never be dangerous if wounds of the thyroid are well sutured.

Dr. Chappell inquired what is the percentage of recovery from exophthalmic goiter following extirpation of the gland.

Dr. Carr said that all those operated on recover from the disease if the operation itself does not give rise to fatal accident.

Dr. Balloch asked if Dr. Hasbrouck's specimen had been examined histologically.

Dr. D. S. Lamb said that Dr. Neate, of the Army Medical Museum, had examined the specimen and had found it to be a pure adenoma.

Dr. Hasbrouck said that the success of the Mayo brothers in the surgery of the thyroid has been due largely to their careful preservation of the parathyroid bodies; if one is displaced or injured during the operation it is immediately transplanted. The patient whose case had been reported had been referred to Dr. Hasbrouck with the diagnosis of lipoma, but, on examination, the mass followed the thyroid cartilage in its deglutition excursions, and he had concluded that it was a tumor of the thyroid gland.

Dr. Reisinger reported the history of a case of Addison's Disease, with recovery. Discussed by Drs. J. D. Thomas, I. S. Stone, Isabel Haslup-Lamb, Barton, Williams, Acker, Chappell and Reisinger. See p. 131.

Wednesday, March 2.—The President, Dr. Mackall, presided; about 75 members present.

Dr. H. R. Gaylord, of Buffalo, N. Y., addressed the Society on, "Tumor of the Thyroid in the Salmonoid Variety of Fish." A rising vote of thanks was given to him for his address.

Wednesday, March 9.—The President, Dr. Mackall, presided; about 60 members present.

The Corresponding Secretary announced a meeting of the Staff of the Government Hospital for the Insane to be held Thursday evening, March 10, to which members of the Medical Society were invited.

Dr. Staples read the paper for the evening, illustrating it with lantern slides: "The X-Ray in Diagnosis." Discussed by Drs. Borden, A. F. A. King, Lochboehler and Staples. See p. 137.

Dr. Williams presented projection pictures illustrating the pathology of *Tabes Dorsalis*. He said that these illustrations showed that the degeneration of the posterior columns of the spinal cord is only secondary. The initial lesion is a diffuse, low-grade meningitis, as evidenced by an exudate of small, round cells of different types. Some of these escape into the arachnoid space and produce a lymphocytosis of the cerebro-spinal fluid. This is easily detected during life by lumbar puncture of the meninges. Where the meninges are reflected upon the outgoing spinal roots they form a canal around these; here the inflammation, peri-

neural and endoneural, implicates the nerve fibers themselves and causes interference later with their function, and later still their alteration and destruction. Before this is complete, however, the exudate may be absorbed and the process pass elsewhere. If the fibrinous exudate is not too massive, function may be resumed unless secondary degeneration of the fibers within the spinal cord has occurred. These cannot regenerate, possessing no neurilemma.

But the anterior roots regenerate effectively, being separated from their trophic center by fibers without neurilemma. This accounts in part for the relative rarity of muscular atrophies in locomotor ataxia. The trophic symptoms are due to the involvement in the focus of radiculitis of the rami communicantes as these pass in and out by the spinal roots.

All these are now well proved facts, which we owe to the researches of Nageotte, Rosen and their followers. The process is histologically a granuloma, indistinguishable from syphilis. The etiology of the disease corroborates this finding, as do the results of the test first devised by Wasserman on the Boralt-Geugon principle of complement deviation. Indeed, a meningitis accompanied by lymphocytosis and often complicated by passing paralysis, more especially of cranial nerves, frequently occurs in secondary syphilis.

The influence of proper and intense antiluetic treatment upon radiculitis now admits of no doubt, and more and more cases are being reported that remove tabes dorsalis from the realm of therapeutic pessimism, in which it was formerly placed. Before commencing specific treatment the physician's diagnosis must be accurate enough to exclude neuritis, cerebellar disease, mixed sclerosis of the spinal cord, diffuse cerebral sclerosis and alcoholic pseudo-tabes of other than peripheral type, any of which it is not hard to confuse with true tabes dorsalis.

Wednesday, March 16.—The President, Dr. Mackall, presided; about 60 members present.

Dr. H. P. Parker read the paper for the evening. Title: "Lobar Pneumonia; an Analysis of 40 Cases." Discussed by Drs. J. D. Thomas, Claytor, Roy, A. F. A. King, J. D. Morgan, Chappell, Nichols and Parker. See p. 164.

Dr. I. W. Blackburn read a paper upon "Hypernephroma of the Kidney," and presented specimens and beautiful illustrations of this tumor. Discussed by Drs. Hagner, J. D. Morgan and Blackburn. See p. 177.

Wednesday, March 23.—The President, Dr. Mackall, presided.

Dr. J. Chalmers DaCosta, of Philadelphia, addressed the Society, the title of his address being "Tendencies in Medicine." A rising vote of thanks was given to him.

[The Society adjourned to "Rauscher's," where a smoker was given, complimentary to the Committee on History of the Society. Especial recognition was made of the faithful and efficient labors of the Chairman of the Committee, Dr. D. S. Lamb, and in appreciation of these labors and of his long, faithful and honorable membership in the Society, a handsome silver loving cup was presented to him.]

Wednesday, March 30.—The President, Dr. Mackall, presided; about 50 members present.

Dr. T. A. Williams presented a patient to demonstrate a psychogenetic torticollis.

Dr. D. S. Lamb presented a specimen and photograph from a case of Pellagra.

Dr. C. W. Richardson read the essay for the evening: "Some Vaso-motor Disturbances of the Upper Air Tract." Discussed by Drs. Bryan, McKimmie, O. Wilkinson, Dye, Carr, Williams, J. D. Morgan, Chappell, P. C. Hunt and Richardson. See p. 121.

Dr. E. P. Magruder read a paper on "Bone Grafting," and presented a case. Discussed by Drs. J. Ford Thompson, Carr and Magruder.

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Editorial.

THE PROTECTIVE POWER OF VACCINATION.

The recent agitation against vaccination in this and in other cities calls for an exposition of the facts in relation to its protective power. The individual honesty of the sceptics of this power is in no way questioned, but their methods of reaching conclusions are based upon a misconception of the literature of the subject, and a lack of appreciation of the work of those who

have dealt intimately and constantly with both smallpox and vaccination.

One argument put forward is that vaccination substitutes cowpox, thereby causing a loathsome disease, for a healthy state of the individual; another, that diseases such as syphilis, tuberculosis, scrofula and some diseases of the skin are introduced into the system through the agency of vaccination; another, that the State has no legal right to enforce the protection, while another is that vaccination does not protect.

In regard to the argument as to cowpox it must be remembered that this is a rare disease; it is with rare exceptions, where the contents of the vesicle have been employed, a local disease; that is, it limits itself to and about the point of inoculation. If, however, the pus from the cowpox is used, no other effect than a generalized cowpox would be expected, since the process of the disease has passed the limits of harmlessness. Cowpox differs in its manifestations from smallpox, and such inoculations soon superseded the practice of inoculation directly from the vesicle of the smallpox patient, a method which had been practiced from time immemorial. Seldom, if ever, are the contents of the vesicle of cowpox employed in man at the present time, but an attenuated animal virus derived from a series of vaccinated healthy, tuberculin-tested animals is used almost exclusively, the world over.

We must admit, in very rare instances, the transmission of some diseases through vaccination at the present day; in former years, however, when every physician employed the arm-to-arm method, these instances were frequent, since many children from whom crusts were taken had some unadmitted or latent constitutional taint, although to all appearances they presented the most unmistakable evidences of perfect health; therefore it was possible for tuberculosis, syphilis or scrofula to be unconsciously transmitted. Those who vaccinated usually carried in the vest pocket two small plates of glass held together by a covering of adhesive plaster more or less soiled; between these plates was placed the crust, pieces of which would be rubbed with a little water into a paste; abrasions were made with a lancet and the paste worked into the wound. Viewing this method in the light of present-day methods there can be no wonder at the frequent appearance of constitutional diseases; when added to this was the chance of infection of the wound by soiled clothing, washing the wound with

the old-fashioned home-made potash soap, and the frequency of scratching by the child, the appearance of ugly ulcers, of erysipelas, of tetanus and some of the forms of eczema might be expected.

The adoption of animal virus, which is now propagated under license of the United States Government, eliminates the transmission of tuberculosis and syphilis. The transmission of bovine tuberculosis to man has not been positively settled; and syphilis is never seen in the lower animals.

Deaths have been reported and charged to vaccination, but unprejudiced investigation will show the causes of these deaths to have been Bright's disease, heart disease or some other infirmity which was *active previous* to the performance of vaccination. In my experience with vaccination and smallpox, covering a period of thirty years, no case of serious illness or death in any way connected with vaccination, *per se*, can be recalled.

The personal-liberty contention should need little consideration, since no one has a right to hold his personal rights paramount to those of the community in which he resides; a wrong interpretation is given the meaning of personal liberty. As well deny the right of a municipality to order the destruction of property adjacent to a furious conflagration in order to prevent a further spread, or the right to kill a rabid animal because it is otherwise valuable.

The claim that vaccination does not protect is a false conception of its benefits.

Personal experience has shown time and again instances of smallpox attacking in succession several unvaccinated members of one family, leaving unmolested those members who had been previously vaccinated. It has also shown the appearance of smallpox in a house, the other members of the household being vaccinated within twenty-four or even as long as forty-eight hours after exposure to the disease, and no other member attacked. The word *exposure* is used in contradistinction to *appearance* of the disease.

The records of smallpox hospitals show conclusively the almost absolute immunity which vaccination confers upon all who are employed in such hospitals; it is true that in isolated instances this is reversed, but this reversal is owing to the omission of revaccination, thereby neglecting to renew the immunity.

In Germany smallpox is almost unknown, since vaccination is enforced in early infancy and renewed at school age; professors of medicine there lecture upon a disease they very rarely see.

The army and the navy of the United States are practically exempt from the disease, and no officer of the Public Health and Marine Hospital Service has ever contracted this disease, so far as my recollection extends.

Physicians vaccinate and revaccinate themselves and their families in the presence of smallpox; the members of the police and fire departments of this city are all vaccinated; they therefore do not contract smallpox. When vaccination is improperly or carelessly done the virus may be washed away with the blood drawn, and should the wound become infected an ugly sore may result and the vaccination would be ineffective. There is never any reason for the extensive scarifications sometimes made; neither is the vaccine shield a proper thing to apply over the wound.

Statistics upon the subject of vaccination are at the command of every physician and investigator, therefore none are here given.

The duty of physicians is to vaccinate children in early life, revaccinate them at puberty and repeat it in the presence of exposure to smallpox; they should not be swayed by the plea of weaknsss of the child, for a vaccination is far less serious than a case of smallpox; they should study to perform the operation in a proper manner. The unvaccinated members of a community receive too much leniency from health authorities in being accorded a protective quarantine after exposure to smallpox; when every member of a community is vaccinated smallpox will be an unknown factor, and the money now spent in this form of paternalism will be put to better uses.—Llewellin Eliot.

The Insane in this District. Their Commitment to the Government Hospital for the Insane.—A process of law that will provide for committing an insane person to this Hospital, and at the same time will enable a person who is *not* insane to be sure of immunity from being committed, is a desideratum. From time to time the law on the subject has been amended, but so far no law has proved satisfactory. The Medical Society has interested itself on several occasions. In 1901

the Committee on Legislation took the matter up; in 1904 the Executive Committee; and in 1906 a letter from the Secretary of the Interior was read to the Society, asking its coöperation to secure the passage of a bill amending the law. There would seem to be no difficulty in framing a law to secure the commitment of an insane person; but can such a law be framed that at the same time will be sufficient to prevent malicious individuals, especially interested relatives, from obtaining the commitment of a person who is *not* insane? This seems to be the problem. One can imagine the state of mind in which a sane person would be who should be *legally* placed in an insane asylum. He would be practically helpless unless the asylum authorities should be sufficiently educated to recognize his mental saneness, and sufficiently honest to discharge him. The matter is being again agitated, and it is to be hoped that something will be done in the right direction.

Inebriate Asylum in this District.—Efforts have been made from time to time to have an inebriate asylum established in this District, but all of them so far without success. The practice long obtained of sending inebriates to the Government Hospital for the Insane. Some members of the Medical Society will remember a paper read by Dr. W. W. Godding in 1886, the Superintendent of the Hospital, on the "Problem of the Inebriate," that portrayed especially the life of one man who at more or less regular intervals was admitted to the Hospital, remained there until he had recovered some measure of resisting power, renewed his battle with the world and, later on, returned again to the Hospital. The interest aroused by the paper led to the appointment of a committee, of which Dr. J. M. Toner was chairman, that prepared a bill and had it introduced into Congress, February, 1887. The bill failed to pass, however, and the District still lacks and very much needs such a refuge for the chronic alcoholic. A bill for the purpose has been introduced into Congress during the present session, and it is hoped will become a law, so that this unfortunate class of individuals may be provided for.

CHIROPRAXY.—In all probability a bill will be introduced into Congress not many months hence to regulate the practice of chiropraxy in this District. The Virginia State Senate recently turned down such a bill for that State. There is only one way to permanently defeat such bills, and that is to have a practice law that will require an examination in all the recognized branches of medicine except *materia medica* and *practice*, leaving to each practitioner to practice in any way he chooses. Such a law assures that the practitioner has a sufficient foundation, and he can then practice, as he certainly will do, according to his own ideas of what is best for each individual case.

VASECTOMY FOR THE PREVENTION OF PROPAGATION OF CRIMINALS AND OTHERS.—Another State is considering this question. A bill has been introduced in the legislature of New Jersey "to authorize and provide for the sterilization of confirmed criminals, idiots, imbeciles, epileptics, rapists and other defectives." As stated in the last number of the ANNALS "this District should not be backward in securing the improvements in the criminal code that tend to the general betterment of society."

VIVISECTION.—The following publications are available for information in regard to vivisection. They are pamphlets published by the Council on Defense of Medical Research of the A. M. A. One is entitled "Vaccination and its relation to animal experimentation," by Dr. J. F. Schamberg, Philadelphia. A second is "Animal experimentation and tuberculosis," by Dr. E. L. Trudeau, of Saranac Lake, N. Y. A third, "The rôle of animal experimentation in the diagnosis of disease," by Dr. M. J. Rosenau, of the U. S. Public Health and Marine Hospital Service. A fourth, "Animal experimentation and cancer," by Dr. James Ewing, of New York. The fifth is "The ethics of animal experimentation," by Prof. J. R. Angell, of the University of Chicago. These publications are timely and furnish the practitioner and layman both with the facts and arguments of and for animal experimentation.

COMMITMENT OF THE INSANE.

When a person in possession of his liberty is seized with insanity in the District of Columbia he is generally admitted into The Government Hospital for the Insane for care and treatment. In order that he may be cared for at St. Elizabeth's he must be committed *twice*, first under the act of Congress approved April 27, 1904, known as the temporary Commitment Act, and again in thirty days, under section 115a of the Code, generally known as the permanent commitment.

The temporary commitment Act, from a medical standpoint, is almost ideal. It is practically an apprehension and commitment upon the certificate of two qualified physicians and two responsible residents, so that a patient suffering from insanity can be taken either to The Government Hospital for the Insane or to any other hospital which has qualified under the Act, for care and treatment, with no more delay or publicity than if he had typhoid fever or pneumonia, thus enabling him to get the prompt and proper treatment which his malady requires.

Within thirty days from the date of temporary commitment there must then be held a formal trial for the purpose of protecting the legal rights of the sick man in its fullest extent, and upon the findings of this court the patient is discharged or formally adjudged a lunatic, and committed to The Government Hospital for the Insane, or other institution, pending his recovery. These proceedings, while legally sound, are open to several objections by the physician, the citizen and the patient: first, from the publicity; their being held in open court causes many a heartache of family and friends which they should be spared, and the spectacle of the exhibition of the sick, with the demonstrations of the symptoms of his malady, is injurious, not only to the patient but to the community. It is, indeed, unfortunate that a sick man should be compelled to come to court and parade his infirmities before the public in order to have him legally declared sick; by so doing his mental condition is often made worse. This injury the law should protect him from and not inflict upon him. In the second place, to have a lay jury decide a question of whether a man is sick or well, or that he needs treatment or not, is almost absurd; in fact, a jury will often by its verdict prevent the possibility of proper treatment to

an unfortunate sick man rather than brand him as a dangerous lunatic.

I have thus criticized the existing methods not alone for the purpose of condemning, but with the hope that possibly I may be able to suggest a remedy that will meet the legal requirements and at the same time not be detrimental to the best interests of the patient. The remedy that I would suggest is a very simple one, namely, to strike out the words in the temporary commitment Act relating to the permanent commitment and repeal all other provisions of law inconsistent with the Act thus amended. The effect of this legislation would be to simply let the patient stay in the hospital for care and treatment when he is there, without the procedure of a permanent commitment, which I believe to be unnecessary and detrimental to the recovery of the patient. The question will at once be asked, How will the rights of the citizen be protected who is not insane, who may be committed through mistake or design under the temporary commitment Act? In reply I will state that section 4 of this Act provides for the discharge of any person alleged to be insane, committed under the Act, who is not insane or who has recovered his or her reason; also that the writ of *habeas corpus* gives full protection to all persons at all times.—D. Percy Hickling.

The *Journal A. M. A.* of April 30th contains three abstracts from the March number of the Annals, namely, from Dr. Carr's "Gallstone diabetes," Dr. Williams' "Instrument for ready clinical investigation of sensibility to coolness and warmth," and Dr. King's "Measles and mice."

Society of Mental and Nervous Diseases, of Washington.—The next meeting will be held Thursday, May 19th, at Dr. Shute's. The President of the Society is Dr. D. P. Hickling; Dr. Wm. A. White, Vice President; Dr. T. S. Lee, Secretary.

Refracting Opticians.—Dr. James Thorington, of Philadelphia, an eminent ophthalmologist, read a paper on this subject in September, 1909, before the appropriate section of the Medical Society of Pennsylvania. It was published in the *Penna. Med. Jour.*, Feb., 1910, pages 369 to 380. It is a comprehensive paper. It sets forth the contentions of the optometrist and replies thereto. It also details the actual practices of the optometrist. Inasmuch as in all probability application will sooner or later be made to Congress for a law legalizing the practice of what is called optometry, in this District, it would be well for the physicians here to inform themselves upon the facts and be prepared to meet the case when it arises.

It seems as if it is necessary that physicians take interest, and a prominent interest, in public affairs in order to secure regulations and legislation tending to the betterment of sanitary conditions and the protection of communities against quackery. Irregular practitioners are resorting to all manner of devices to get a foothold. In Massachusetts the osteopaths have had introduced into the assembly a bill to authorize them to grant the degree of M. D. The patent medicine men are also seeking to avoid the pure food and drug laws by working through the express companies instead of the post office, and in other ways. Physicians are the only persons who can be depended on to resist these baneful efforts.

The American Druggists' Syndicate.—The *Jour. A. M. A.*, Jan. 22, 1910, page 303, contains a statement that this syndicate, known as the A. D. S., is a coöperative patent medicine concern.

Medical Defense Society.—The question is asked whether it would be advisable to organize in this city such a society. If any member of the Medical Society thinks that it is, a communication on the subject would be printed in the Annals.

AUTHORS OF PAPERS published in the ANNALS are reminded that their papers, galley proofs and corrections should not be sent directly to the printer, but to the Chairman of the Editorial Committee. The printer understands this, and is sometimes put to the trouble of sending papers to the Editor which should have come to the latter in the first place.

AS MOST OF THE MEMBERS OF THE SOCIETY are also members of the American Medical Association, and therefore receive the journal of the Association, extracts or abstracts from the journal are made for the ANNALS only in rare cases.

NINTH DECENNIAL CONVENTION FOR THE REVISION OF THE PHARMACOPŒIA OF THE UNITED STATES OF AMERICA.—In accordance with the provisions of Article VIII, Chapter 1, of the By-Laws of the U. S. Pharmacopœial Convention, the President of the Convention hereby invites the several bodies, entitled under the Constitution to representation therein, to appoint delegates to the First Decennial Meeting of the said Convention to be held in the City of Washington May 10, 1910.

The following list of delegates to the Pharmacopœial Convention of 1910 is offered for publication "without prejudice," it being understood that such publication does not of necessity mean that these delegates will be received and seated by the Convention, as their credentials have not as yet been passed upon by the Committee on Credentials and Arrangements.

Attention is invited to a ruling of the Committee on Credentials and Arrangements, that it cannot recognize the right of any one individual to represent more than one organization or institution.

Medical Society of the District of Columbia.—Murray Galt Motter, John W. Chappell, D. Webster Prentiss.

Georgetown University, School of Medicine.—George M. Kober, G. Lloyd Magruder, W. M. Barton.

George Washington University, Department of Medicine.—Sterling Ruffin, B. M. Randolph, Noble P. Barnes.

George Washington University, National College of Pharmacy.—Henry E. Kalusowski, Samuel L. Hilton, Lewis Flemer. Alternates—Samuel Waggaman, Frank P. Weller, Wymond H. Bradbury.

Howard University Medical College.—William H. Seaman, John W. Mitchell, J. Herve Purdy. Alternates—D. S. Lamb, Collins Marshall.

Howard University Pharmaceutic College.—Paul Bartsch, George N. Perry, Herbert C. Scurlock. Alternate—Edgar B. Keemer.

We are asked to announce that it will be possible for the medical and pharmaceutical press and the organizations represented in the Pharmacopœial Convention of 1910, to secure, at a cost of five cents per folio of one hundred words, a carbon copy of the stenographic report of the proceedings of the Convention. Arrangements should be made promptly, with Dr. Murray Galt Motter, 1841 Summit Place, and applications must be accompanied by a certified check for $100 as a guarantee of the payment of the final cost of the work.

The Annals will publish any local medical news concerning the medical societies, hospitals, colleges and other institutions in this District, and the personnel of the same, whenever such news would be of general interest; provided, of course, that the information is given by persons who are known to the Editorial Committee.

The Hippocrates Society, the object of which is "the cultivation and promotion of knowledge in whatever relates to the science of medicine and surgery," holds meetings on the second and fourth Thursdays of each month from October to May. The membership in this society is limited to 25. The officers for the present season are: President, Dr. Edgar Snowden; Vice President, Dr. Arthur L. Hunt; Secretary and Treasurer, Dr. Laurence M. Hynson.

Schedule of Meetings for the Balance of the Session of 1909–10.

Date.	Place.	Essayist.
May 12	Dr. C. S. White, The Farragut	Dr. J. Lewis Riggles.
May 26	Smoker	President's Address.

THE THERAPEUTIC SOCIETY meets on the first Saturday in each month at the G. W. College of Pharmacy, 808 I Street, N. W. Secretary, Dr. S. R. Karpeles, 1102 Fifth Street, N. W. Physicians invited.

WASHINGTON MEDICAL AND SURGICAL SOCIETY.—President, H. Atwood Fowler; Vice President, Chas. M. Emmons; Secretary, Geo. H. Heitmuller; Treasurer, Frank E. Gibson; Curator and Librarian, W. G. Erving.

Program—1909–1910.

Essayist.	Date and host.	To open discussion
To be selected	May 16, 1910, Annual Banquet	— ———
Dr. Fowler, President's Address	Oct. 24, 1910, Dr. Nevitt	— ———
Dr. Miller	Nov. 28, 1910, Dr. Egbert	Dr. Emmons.
Dr. Mitchell	Dec. 26, 1910, Dr. Gannon	Dr. Clark.

WOMAN'S MEDICAL SOCIETY, D. C., meets on the second Tuesday of the month, October to May, at the homes of the members. President, Dr. Mary Parsons; Vice President, Dr. Sophie Nordhoff Jung; Secretary-Treasurer, Dr. Emma Lootz Erving.

PHYSIOLOGIC THERAPEUTICS —Those of our readers who are interested in this subject (including Hydrotherapy, Electrotherapy, Massage, Hyperemia, etc.) will be glad to know that it is proposed to shortly inaugurate a new journal devoted solely to the delineation of the progress made in these lines of therapeutic endeavor.

The American Journal of Physiologic Therapeutics will be published bimonthly and the subscription price will be $1.00 a year. The names and addresses of all interested physicians should be sent in, and those desirous of subscribing at once may enclose their remittance when writing. It is to be hoped that a widespread interest may be aroused in this matter. Write *now*, while this is fresh in your mind, to *The American Journal of Physiologic Therapeutics*, 72 Madison Street, Chicago.

American Pediatric Society.—This society will hold its 22d annual meeting in this city, May 3 to 5, 1910, at the New Willard. Programs and further information can be obtained from Dr. S. S. Adams, 1 Dupont Circle.

American Medical Association.—The fee to join the Association has been reduced to $1.00 a year; the additional $4.00 being charged for the journal.

The following letter has been received:

Washington Sanatorium Co.
Washington, D. C., *April 8, 1910.*

My dear Doctor:

I want to call your attention to the facilities which Starmont Sanatorium has for taking care of cases of tuberculosis. Through the donations of Mr. Emile Berliner, Mrs. Richard Butler and others, a number of new buildings have recently been constructed, including an infirmary and model cottages. This sanatorium, as you no doubt know, was established near Washington Grove, Md., in 1905, through the efforts of Gen. Sternberg, who has enlisted the sympathy and financial assistance of many physicians and philanthropic citizens of Washington. The results obtained show that incipient and moderately-advanced cases of tuberculosis can be successfully treated in this vicinity, and, indeed, the results, as published, compare favorably with those obtained in Colorado, New Mexico and northern New York. It is now generally conceded that patients who recover in their home climate can continue to live in that climate, while those who take the cure at high altitudes are very likely to suffer a relapse upon returning home. Moreover, the depressing effect of homesickness in many cases more than offsets any advantages that might otherwise be derived from climatic treatment. The charges at Starmont Sanatorium—from ten to fifteen dollars per week—are less than at any similar self-supporting institution known to me. We will be glad to have you visit the Sanatorium, and I am sure you will be convinced that the conditions there are ideal for the care of this class of cases.

Very sincerely yours,
Jesse H. Ramsburgh, *Secretary.*

The National Confederation of State Medical Examining and Licensing Boards will hold its Twentieth Annual Meeting at St. Louis, Mo., on Monday, June 6, 1910, in the Southern Hotel.

The subjects to be taken up at this meeting will be a consideration of practical clinical instruction in medical colleges, a report on medical education in the United States by a representative of the Carnegie Foundation, and a report on a proposed materia medica list by a special committee. These topics are all practical and of vital interest to examining boards, medical schools and the profession. The contributors of papers to the symposium on clinical instruction are men of the highest standing in the medical profession, many of them teachers in some of the foremost institutions in this country, and their productions will be worthy of the most careful consideration. The chief object of this symposium is to determine, as far as possible, whether clinical instruction in medical schools can be made sufficiently practical and thorough to warrant the medical boards in demanding practical examinations in the principal branches of the medical course.

An earnest and cordial invitation to this meeting is extended to all members of State Boards, professors and teachers in medical schools, and all others interested in securing the best results in medical education.

The officers of the Confederation are: President, A. Ravogli, M. D., 5 Garfield Place, Cincinnati, Ohio; Secretary, Murray Galt Motter, M. D., 1841 Summit Place, N. W., Washington, D. C.

Elections in the A. M. A.—A letter has been received from Dr. Frank Lydston, of Chicago, in regard to what he considers illegal and unfair elections and monopolistic government in the A. M. A. He asks that it be published in the Annals. It is too long to be published in full, and while an abstract might perhaps be made it has been thought best to refer the letter to the Medical Association of this District, which is represented in the A. M. A.

Parke, Davis and Company, of Detroit, Mich., send us a reading notice in regard to one of their preparations, Liquor Sedans, which they recommend in the treatment of functional dysmemorrhea, menorrhagia, ovarian irritability, menstrual irregularity, etc. It is composed of black haw, hydrastis and Ja-

maica dogwood, combined with aromatics, and, they state, is a very acceptable preparation. They also make a Liquor Sedans without sugar for cases in which sugar is contraindicated, and another preparation, Liq. Sed. with cascara.

The New England Medical Monthly, for twenty-nine years edited and published by Dr. William C. Wile, of Danbury, Conn., has been purchased by the Annals Publishing Co., of Boston, and will be combined with the *Annals of Medical Practice.*

Dr. Francis D. Donoghue, formerly editor of the *Annals of Medical Practice*, will continue in charge of the consolidated journals.

Exchanges.

American Journal Surgery.
Buffalo Medical Journal.
Bull. El Paso Med. Society.
California State Journal Medicine.
Colorado Medicine.
Cronica Medica Mexicana.
Illinois Medical Journal.
Journal Camden Co. Medical Society.
Journal Kansas Medical Society.
Journal Medical Society New Jersey.
Journal Missouri State Medical Association.
Journal National Medical Association.
Journal South Carolina Medical Association.
Louisville Monthly Journal Medicine and Surgery.
Maryland Medical Journal.
Monthly Cyclopedia and Medical Bulletin.
New York State Journal Medicine.
Northwest Medicine.
Old Dominion Journal of Medicine and Surgery.
Pacific Medical Journal.
Pathologica, Genoa.
Pennsylvania Medical Journal.
Proctologist.

Providence Medical Journal.
Quarterly Bull., Northwestern Univ. Med. School.
Texas State Journal Medicine.
Virginia Medical Semi-Monthly.
West Virginia Medical Journal.

Books and Pamphlets Received.

"The Rat and its Relation to Public Health." P. H. and M. H. S., 1910.

Tom A. Williams, Washington, D. C.: "So-called Reflex Neurotic Symptoms and the Psychic Factor." Also: "The Psychogenesis of some 'Reflex' Neuroses." Also: "Case Illustrating the Arrest of Early Paresis." Also: "The Pathological Prodromes of Taboparesis." Also: "Facial Spasm and Tic; Torticollis, Diagnosis and Treatment." Also: "Diagnosis of Disorders of the Cerebellar Apparatus;" reprints.

Parker Syms: "Carcinoma of Pancreas," etc.; reprint.

H. H. Rusby: "The Federal Law and the Pharmacopœia;" reprint.

J. R. Verbrycke: "Chronic Constipation;" reprint.

Annals of the Clin. Laboratories," Paris, France, January–February, 1910.

Address of Dr. S. S. Washington to the Graduating Class of the Columbus Colored Public Schools, Columbus, Ga.

R. L. Owen, Senator from Oklahoma: Speech in the Senate on the bill, 6049, creating a Department of Public Health.

Too Late.—Patient (being treated for venereal trouble): "Doctor, what is that you have there?"

Doctor: "That is iodoform."

Patient: "What!"

Doctor: "Iodoform."

Patient: "I ought to reform?"

Doctor: "No—now it is too late; you should have reformed before you got this."—Dr. Herman Le Saulnier.

Medical Miscellany.

Andreas Vesalius, his Life and Work.—Dr. D. K. Shute, of Washington, D. C., in *Old Dominion Jour. Med. and Surgery*, March, 1910, p. 195. Read before the Washington Medical Historical Society.

Relative Increase in Longevity.—From *Bost. Med and Surg. Jour.*, Feb. 17, 1910, p. 225. In Geneva, where reliable vital statistics have been kept for 300 years, the average duration of life has increased from 21.2 to 39.7 years during that period. In Prussia it has been exactly the same, but the present average is greater, namely, to 42.8 years; in France, 45.4; in England and Wales, 45.9; Denmark, 51.7; Sweden, 52.2.

So-called Thymus Death. Report of 7 Cases in One Family.—Griffith, in *Trans. Amer. Pediatric Soc.* for 1909, p. 128. He discusses the subject and says that we should not hastily draw a conclusion in case of sudden death that it is due to an enlarged thymus.

Transposition of Viscera.—Pollock and Jewell, in *Med. Record*, N. Y., Jan. 22, 1910, p. 152, report the case and discuss the subject. Woman, age 44. The organs of both thorax and abdomen were involved.

Corset Wearing in Saxony.—It is reported from Germany that the royal minister of education in Saxony has recently issued a decree that provides that girls who wear any form of corset may not attend any public educational institution in that kingdom (*Bost. Med. and Surg. Jour.*, March 31, 1910, p. 436).

Anesthesia by Hyoscin, Morphin, Cactin. Death.—Gifford, in same journal, Feb. 3, 1910, p. 139, reports the case. There were other elements, however, in the case that possibly contributed to the death.

Rectal Anesthesia in Amebic Dysentery. Death.—Cunningham reports a case in same journal, March 24, 1910, p. 387. The danger is that of causing perforation.

Organotherapy.—A symposium on this subject before the Chicago Medical Society, Dec. 8, 1909, appears in *Illinois Med. Jour.*, March, 1910, pp. 291–324.

The Rat in its Relation to Public Health.—The Public Health and Marine Hospital Service, 1910. This is a symposium of papers by many writers, officials respectively in the P. H. and M. H. S. and Dept. Agriculture. The subjects treated include the Natural History of the Rat; Plague Infection in Rats; Rat Leprosy; other diseases of the rat; its parasites, especially in relation to plague; the means of exterminating rats, its natural enemies, rat proofing, viruses, etc.; rats in relation to shipping, to sanitation, etc. Illustrated. An introduction by Dr. Wyman, the Surgeon General of the service.

This is an excelent résumé of the subject, apparently exhaustive. An exceedingly interesting and instructive volume of 254 pages. The scope of the book is shown by the titles of the papers.

Cervical Ribs.—Sawyer, in *Quart. Bull. Northwestern Univ. Med. School*, March, 1910, p. 246, reports six cases that occurred in his practice and required operation. Five were in females. In four the occupation necessitated much finger and hand movement and the presence of the extra ribs caused disability. In two cases there was also a small cervical rib on the other side. The main symptom and the earliest was a neuralgic pain. In three cases there was atrophy of muscles. In one case when the shoulder was elevated the radial pulse stopped, probably from the pressure of the scalene muscle. The x-ray is of great value in making the diagnosis.

Thoracic Surgery.—Three papers in the *Medical Record, N. Y.*, March 19, 1910, as follows: One by Meyer on "The avoidance of apparatus complicating the operation;" the second by Carrel on "Experimental intrathoracic surgery by the Meltzer and Auer method of intratracheal insufflation;" the third by Elsberg on "The value of continuous intratracheal insufflation of air" (Meltzer). Discussion on p. 510.

Pneumonia in the Aged, Treated with Pneumococcus Vaccine.—Craig, in same journal, Feb. 12, 1910, p. 259, reports six cases so treated, all of which recovered.

Smallpox and Vaccination.—From 1900 to 1903 there were recorded in the United States 163,000 cases of smallpox; in Germany during the same time, 1,051 cases; in that country strict vaccination laws are enforced.

Scarlet Fever, Prophylaxis with Streptococcus Vaccine.—Smith, in *Boston Med. and Surg. Jour.*, Feb. 24, 1910, p. 245. His conclusions are that these vaccines, used as advocated by

Gabritschewsky, have some influence in controlling epidemics of scarlet fever. With proper care their use has no harmful results. They should be given a wider application in this country.

Cerebro-spinal Meningitis.—Fischer, in *Monthly Cyclop. and Med. Bull.*, March, 1910, p. 129, reports a case occurring in an infant two months old. The diagnosis was made by tapping the lateral ventricles. Flexner's serum was used in the treatment, injected into the ventricles. Recovery. The report was discussed among others by Flexner himself.

Beri-beri.—Braddock, in *N. Y. Med. Jour.*, March 12, 1910, p. 541. He says that the disease is entirely controllable by stopping the rice diet and by good sanitation and cleanliness. Is not contagious; prevails where persons are crowded together, with neglected sanitation, and where they eat from a common infected supply of rice.

Pellagra, a Fungus, Diplodia, a possible Factor in Etiology.—Reed, in same journal, Jan. 22, 1910, p. 164. Meal affected with this fungus was toxic to mice.

Exophthalmic Goiter.—A symposium on this subject at the Chicago Medical Society, Nov. 11, 1909, appears in *Illinois Med. Jour.*, March, 1910, pp. 273–290.

Raynaud's Disease.—Several papers in *Penna. Med. Jour.*, April, 1910. One by Goepp, Miller and Kelly, p. 503; case reported in which there was polycythemia and enlargement of spleen; both legs had to be amputated. P. 507, Githens reports a case and discusses the nitrogen metabolism. P. 509, Musser reports a symptomatic case.

Tuberculosis, Modes of Infection.—Walker, in *Cal. State Jour. Med.*, April, 1910, p. 127, states that the most common mode of infection is through the digestive tract. Bovine tuberculosis can be transmitted to man. The disease holds first place in dairy cattle, beef cattle and hogs. The tuberculous cow eliminates the bacilli mostly with the feces. Hogs as a rule contract the disease from tuberculous cattle, by working over their feces or from their milk. Milk from any herd in which there are one or more tuberculous cows generally contains virulent bacilli. Butter as a medium will preserve the vitality and virulence of the bacilli for at least 153 days. In order to eradicate or greatly lessen tuberculosis in man we must weed out tuberculous cows from dairy herds and animals used for human food.

Tuberculin Treatment of Dispensary Patients.—Hawes and Floyd, in *Bost. Med. and Surg. Jour.*, Jan. 6, 1910, p. 1. They report the results of treatment of 143 patients. Of these, 19 died; 16 did not improve; 108 were more or less benefited. In no case was there any harm done; reactions were rare and mild. In the incipient disease, especially in children, tuberculin helped to increase bodily resistance, and in more advanced cases it often alleviated distressing symptoms, prolonged life, and occasionally helped to arrest the progress of the disease. In surgical tuberculosis it had a marked beneficial effect. Hygienic outdoor treatment should always be combined with the tuberculin treatment. Dispensary patients can be treated with tuberculin safely and beneficially, provided there is close personal coöperation between patient and physician.

Effect of Pregnancy on Laryngeal Tuberculosis.—C. R. Dufour, of Washington, has an article on this subject in *Virginia Med. Semi-Monthly*, March 11, 1910, p. 542. Read before the Georgetown Univ. Med. Society.

Tubercular Peritonitis.—Winslow, in *Maryland Med. Jour.*, April, 1910, p. 121. His conclusions are that some cases recover without surgical intervention, but there is always a doubt as to the correctness of the diagnosis. Some cases are not appropriate for operation, but in at least 50 per cent. of suitable cases much benefit and permanent cure follow laparotomy. Cases in which there is free fluid in the abdomen, with little or no evidence of disease elsewhere, are the best treated surgically. The adhesive forms are sometimes cured by laparotomy, but in much smaller proportion. After the surgical treatment other measures, hygienic, climatic and medicinal, that are found useful in pulmonary tuberculosis should be used.

Syphilis, Fleming's Method of Serum Diagnosis. Results in 141 Cases.—Gibbon, in *Jour. Royal Army Med. Corps*, Feb., 1910, p. 170. His conclusions are that syphilis can be readily diagnosed by means of the reaction in which rabbit's heart extract, sheep's red-blood corpuscles and the suspected serum alone are used. In 80 per cent. of the cases of syphilis diagnosed clinically the test gave positive results. In 100 per cent. of non-syphilitic cases the result was negative. The reaction did not appear in the blood of some patients who had had a prolonged course of mercurial treatment.

Venereal Prophylaxis.—The *U. S. Naval Med. Bull.*, April, 1910. An article by Spear, p. 146. He says that more men are disabled and rendered useless for duty in the navy by gonorrhea,

chancroids and syphilis than by any other class of diseases. Most cases of venereal infection can be prevented by proper instruction of the enlisted personnel in the immediate causes of these infections and the exact manner in which these diseases are transferred from one person to another; by the use of protectors during exposure; the administration of preventive treatment, on the return from liberty, to all men who have exposed themselves to infection, and circumcision of all men who have long or tight foreskins. These points are elaborated.

On pp. 211–222 are reports on the prophylaxis. These comprise talks to the men on venereal diseases and their prevention, orders relating thereto, full directions for those who have been exposed, threats of punishment to those who fail to obey orders, and some statistics.

There is much other interesting matter in the bulletin on subjects other than the above.

Wasserman Reaction, Result of 1,289 Examinations.—Matson, in *Northwest Medicine*, April, 1910, p. 103; an abstract of the paper. In 200 cases of tuberculosis no reaction was obtained. In the great majority of the cases known to be syphilitic the reaction was positive. In hundreds of cases not syphilitic the reaction was almost always negative.

Lensman, in same number, p. 103, states that the reaction is of value in all cases in which an ulcer on the genitals is of obscure origin or atypical. Certain acute exanthemata, if they give a negative reaction, exclude the possibility of syphilis. The reaction is of value in the diagnosis of diseases of the nose, throat and eye; in cases of internal medicine, surgery, obstetrics and neurology. Also in the differential diagnosis of many important cases, in life insurance, matrimony and in the control of treatment.

Spasmodic Stricture of Esophagus, Case Demonstrated by the X-Ray.—La Fetra, in Trans. Amer. Pediatric Soc. of 1909, p. 48, reports a case in an infant 16 months old. Bismuth subcarbonate was used in order to secure the radiogram. Reference was made to the case reported by Dr. S. S. Adams at the meeting in 1908.

Appendix. Analysis of 1,411 Operations.—McWilliams, in *N. Y. State Jour. Med.*, March, 1910, p. 110. Nearly 40 per cent. of the cases occurred before 20 years of age; over two-thirds before 30 years. The youngest patient was 21 months old; recovered. The oldest was 72 years; died from sepsis. The lowest death rate was between 20 and 30 years. The mortality in the 1,411 cases was 5 per cent. The cases included 92 acute

catarrhal; 154 acute suppurative; 33 acute suppurative with abscess; 13 acute suppurative with peritonitis; 118 acute gangrenous; 147 acute gangrenous with abscess; 70 acute gangrenous with general peritonitis; 60 incision of abscesses without removal of appendix; 512 chronic and relapsing cases; 212 appendix removed in association with other primary operations. The analysis is full and complete and is well worth reading, but too long to abstract.

Invagination of Small Intestine in the Colon, Death.—J. Thos. Kelley, of Washington, *Virginia Med. Semi-Monthly*, March 11, 1910, p. 545, reports the case. Read before the Med. and Surg. Society, Washington, Dec. 2, 1909.

Alcoholic Cirrhosis in Boy 4 Years Old.—Blakely, in *Bost. Med. and Surg. Jour.*, Feb. 24, 1910, p. 245, reports the case. The boy had been drinking whiskey for about two years. He died; no autopsy.

Congenital Cyst of Liver.—Shaw and Elting report the case in *Trans. Amer. Pediatric Soc.* for 1909, p. 122; in an infant 17 months old. The cyst was not parasitic. Celiotomy was done and the cyst punctured, but the infant died two hours after the operation.

Case of Enormous Ascites.—DeLoffre, in *N. Y. Med. Jour.*, March 12, 1910, p. 547, reports the case. Filipino woman, age about 28, had been ailing ten years; unable to walk for that time; unable to lie down. Diameter of abdomen 32 inches; this would make the circumference of the abdomen 100 inches. Paracentesis was done, the fluid drained away, and she was able to lie down for the first time in three years.

Surgery of the Prostate.—Deaver, in *Penn. Med. Jour.*, April, 1910, p. 534, states that prostatectomy is indicated in benign hypertrophy when residual urine is constantly present, in the absence of general contraindications. Suprapubic prostatectomy is indicated in large, soft, glandular enlargements, and when the hypertrophy is complicated with calculus or operable disease of the wall of the bladder. Perineal prostatectomy is indicated in smaller fibrous hypertrophy and when preservation of procreative power is desired. Selection and pre- and post-operative handling of the patient are of equal importance with the type of operation. Chronic prostatitis is operable only after exhaustion of conservative measures, and when there is definite obstruction to urination. The hope of a cure of malignant disease of the prostate is rather in early operation than in more radical measures.

Young, same journal, p. 524, states conclusions based on a study of 385 cases of perineal prostatectomy.

Urinary Tract, Treatment of Affections by Bacterial Vaccines.—Hartwell and Streeter, in *Bost. Med. and Surg. Jour.*, March 31, 1910, p. 415, state that these vaccines relieve symptoms in mild forms of cystitis, less so in pyuria; are of no value in severe cystitis; probably hasten recovery in pyelitis; have no influence on bacteriuria.

Hypernephromata.—Wilson, in *Old Dominion Jour. Med. and Surg.*, April, 1910, p. 237, reports 32 cases as seen in eight years at the hospital with which he is connected. He gives a summary and twelve beautiful plates as illustrations.

Varicocele, Analysis of 403 Cases.—Barney, in *Bost. Med. and Surg. Jour.*, March 17, 1910, p. 350. His conclusions are that we must discard the theory of the mechanical origin of varicocele and lay greater stress on its being a congenital defect or overgrowth. The so-called radical operation is by no means universally successful, and in most cases can be advantageously supplemented by a course of psychic sprouts such as most physicians use in their daily routine.

Sarcoma of Uterus in a 12-year-old Child.—Miningham, in *Jour. Med. Soc. New Jersey*, April, 1910, p. 556, reports the case. The affected organ was removed by combined vaginal and abdominal operation. The child fully recovered.

Cancer of Breast; Removal; Recurrence in Scar 17 1-2 Years Afterward.—Powers, in *Bost. Med. and Surg. Jour.*, Jan., 27, 1910, p. 114, reports the case.

Broad Ligament, Varicocele.—Else, in *Northwest Medicine*, March, 1910, p. 75. He states that the condition is not rare and is usually preventable. Every case of pelvic congestion, either active or passive, should be regarded as a probable future case of varicocele, and the proper treatment should be instituted. Medical treatment should always be tried first except in extreme cases, and, if unsuccessful, as conservative an operation should be performed as is consistent with good results.

Puerperal Septicemia Treated with Diphtheria Antitoxin.—Deacon, in *Med. Record*, N. Y., Jan. 8, 1910, p. 64, reports the case, with recovery.

Metastatic Gonorrheal Conjunctivitis.—Zentmayer, in *Penn. Med. Jour.*, April, 1910, p. 554, reports a case and states that the disease occurs oftener than is thought; that in all cases of bilateral catarrhal conjunctivitis rebellious to treatment, inquiry

should be made as to the possible occurrence of specific urethritis; that in such cases, although pathogenic organisms may be absent from the conjunctival discharge, it is probable that there is metastatic gonorrheal conjunctivitis; and the same is true even if the gonococcus is found in the discharge from the conjunctiva.

Nose, Deflected Septa, Disease of Accessory Sinuses.—Wilson, in *Med. Record*, N. Y., Jan. 29, 1910, p. 184. He considers the question of hereditary anatomical peculiarities, and concludes that the accessory sinuses do not serve any specific useful purpose but should be classed among the organs that are vestigial or disappearing; and this fact accounts largely for their susceptibility to infection. Deviation of nasal septa is probably equally common in all races and becomes pathological only when the nose is congenitally narrowed. The cause of this narrowing and deviation is primarily in development; the brain case is developed at the expense of the bones of the face and olfactory apparatus.

Hexamethylenamin; its Elimination by the Mucous Membrane of the Middle Ear.—Barton, of Washington, *Jour. Amer. Med. Assn.*, March 12, 1910, p. 871, reports the case; read before the Medical Society, District of Columbia. The conclusion was that perhaps the drug would be found useful in inflammation of the middle ear.

Ear Surgery; Local Anesthesia (Neumann).—Hurley, in *Bost. Med. and Surg. Jour.*, March 24, 1910, p. 380, states that Neumann's anesthesia fulfills all the requirements of Heidenhain, and is a great advance in otology. It seeks to limit the radical exenteration to those cases in which there is a strong presumption of mastoid or brain disease. It promises to do away with chiseling out a healthy mastoid to reach a chronic ear trouble. It claims the intra-tympanal field as its own.

Infant Mortality; the Influence of Race.—Cabot and Ritchie, same journal, Feb. 17, 1910, p. 199. They state that in Boston the number of stillbirths and of digestive troubles in infants is by far greatest among the Jews. From other infectious diseases than those of digestive organs the Italians suffer most; most of the cases were pneumonic. The Italians, however, have less mortality from congenital weakness, prematurity and birth accidents. The Irish have the least record for still births, and much fewer babies have infectious diseases. In all causes of infant mortality they show a better record than Jews or Italians. So-called Americans have the best record except for prematurity, in which it has the worst; and in stillbirths a worse record than the Irish, and nearly equal to the Italians.

Milk Intoxications.—Fitzpatrick, in *N. Y. Med. Jour.*, April 2, 1910, p. 691, states that milch cows eat poisonous weeds, that is, poisonous to the milk. The result is more or less summer complaint in infants. Some of the poisons are not altered by boiling the milk. Dairymen pay no attention to the weeds. Wild cattle avoid these weeds but domestic cattle do not. He reports cases of poisoning.

Brain Storm.—Woodbury, in same journal, March 12, 1910, p. 531. He says that the term is not a scientific but popular one. It means a brief state of mental perturbation without reference to the cause. Such attacks may be influenced by atmospheric and climatic conditions. Emotional, confusional conditions may occur in apparently normal persons, but more often in the insane, oftener in neurasthenic persons and those in a low vital state and in the epileptic. The condition is symptomatic of general conditions and is not of particular significance.

Death in Epilepsy.—Munson, in *Med. Record, N. Y.*, Jan. 8, 1910, p. 58. He says that the causes of death are largely associated with the disease itself and may be classed as pulmonary or purely epileptic. Pulmonary conditions usually follow the edema of the seizures; exposure while helpless may also be responsible. The lung doubtless becomes more susceptible to the infection. Death may occur at the time of the seizure, as from traumatism, suffocation, etc. Death during the seizure usually shows at autopsy an edema and congestion of the lungs. One conclusion is that the epileptic should never be by himself, but always under the eye of some capable person.

Acute Poliomyelitis, Experimental Studies as to the Cause.—Strauss and Huntoon, in *N. Y. Med. Jour.*, Jan. 8, 1910, p. 64, have a long article on this subject. They conclude that the cerebro-spinal fluid in acute cases does not contain the virus in an infective state; the bacterial findings that have been reported are either contaminations or secondary invasions. When the disease is recognizable clinically, namely, after the onset of paralysis, the virus is probably no longer present in the blood, or at least cannot produce infection in intraperitoneal or intradural inoculation. Histologically the lesion in poliomyelitis is very similar to that of rabies. The ascending paralysis seen in rabies is clinically like that of poliomyelitis. There is a possible analogy between the infective agent of each disease; the virus is probably not bacterial but protozoal. Acute poliomyelitis is certainly infectious.

Psychogenesis of Some "Reflex" Neuroses.—Tom A. Williams, of Washington, in same journal, Jan. 22, 1910, p. 181.

Taboparesis; the Pathological Prodromes.—Tom A. Williams, of Washington, has a paper on this subject in *Med. Record*, N. Y., Feb. 5, 1910, p. 219. Also a paper on "So-called reflex neurotic spmptoms and the psychic factor," in *N. Y. Med. Jour.*, same date, p. 285.

Multiple Exostoses with Syringomyelia.—Oberndorf, in *N. Y. Med. Jour.*, March 5, 1910, p. 479, reports the case.

Reviews.

THE AMERICAN ASSOCIATION OF MILK COMMISSIONS.—Proceedings of the third annual session held at Atlantic City, June 7, 1909.

This report of 142 pages is filled with a number of interesting articles upon the pure milk movement, and also contains a list of the Officers, Council and Standing Committees for 1909 and 1910 and the Constitution and By-Laws.

The object of this Association is to exchange views and adopt uniform methods of procedure in the handling of milk throughout the United States. It contains a number of interesting and able papers by Drs. E. C. Schroeder, Wm. H. Park, John W. Kerr, R. G. Freeman, Prof. H. W. Conn and others. It also contains an interesting report of the work that is being done by the Milk Commission throughout the United States and Canada. The book should be read by every physician, not only for his own information but in order that he may be able to render the necessary aid and assistance in bringing about the clean handling of milk. It is noted with regret that the Medical Society and Association of the District of Columbia are not represented in this important organization.—D. P. HICKLING.

THE EXAMINATION OF THE FUNCTION OF THE INTESTINES BY MEANS OF THE TEST DIET, ITS APPLICATION IN MEDICAL PRACTICE AND ITS DIAGNOSTIC AND THERAPEUTIC VALUE. By PROF. DR. ADOLF SCHMIDT, of Halle. Authorized translation from the second German edition by Charles D. Aaron, M. D., of Detroit. Philadelphia, F. A. DAVIS COMPANY, 1909. 8vo., pp. 126, with three colored plates. Price, $1.00.

The object of the extended investigations of Schmidt has been to attain the same precision in diagnostic methods and the same elucidation of pathologic conditions in the domain of the intestinal tract as the present methods of investigation of the stomach and its functions have effected for gastric disorders. For purposes of

interpretation and comparison a standard diet is as essential in feces examination as in gastric analysis. Schmidt gives in detail the test diet employed by him, the methods of examination of the resultant feces and the diagnostic and pathologic interpretations to be drawn from the findings. While finality has perhaps not yet been reached in this field, Schmidt's work is a most important contribution to the development of the subject.—J. B. NICHOLS.

THE PROPAGANDA FOR REFORM IN PROPRIETARY MEDICINES. Sixth Edition. Containing the various exposés of nostrums and quackery which have appeared in *The Journal of the American Medical Association*. Price, paper, 10 cents; cloth, 35 cents. Pp. 292. Illustrated.

NEW AND NONOFFICIAL REMEDIES, 1910. Containing descriptions of articles which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association, prior to Jan. 1, 1910. Paper. Price, paper, 25 cents; cloth, 50 cents. Pp. 256.

HANDBOOK OF THERAPY. Cloth. Price, $1.50. Pp. 421. Chicago. American Medical Association, 1910.

These three little books, published in pocket size, should be in the hands of every student and practitioner of medicine. "The Propaganda for Reform in Proprietary Medicines" presents most of the exposures that have appeared in *The Journal of the American Medical Association*, showing fraud either in the composition of various proprietary preparations or in the claims made for them. It affords the physician reliable information as to the value, or lack of value, of many of the so-called ethical proprietaries on the market, and will enable him to answer intelligently questions asked by many patients relative to some of the widely advertised "patent medicines." After reading this book, the nostrum-prescribing doctor might well retire "to some quiet corner and kneel down and pray the Lord to give him a little common sense."

"New and Nonofficial Remedies" contains descriptions of all articles approved by the Council on Pharmacy and Chemistry, up to December 31, 1909. The action, dosage, uses and tests of identity, purity and strength of all these are given. While there are some rather glaring inconsistencies, as, for instance, between the announced rules and the admissions of certain so-called "Liquid Foods," the general conclusions of this brief chapter are a sane mixture of sound common sense and physiologic fact which should warn the physician as to the small value of such products. In the sixteen pages devoted to a description of serums and vaccines there is, we will venture to say, more real informa-

tion than is to be found in any single text-book of much greater pretensions.

The "Handbook of Therapy," bound in limp cloth, with round corners, making a most convenient pocket companion, is perhaps the best offset yet published against the paltry and pestiferous literature with which the manufacturers flood the physicians' mail. Written by an optimist, a teacher and clinician of large experience and well-deserved fame, it gives in clear and terse style a brief review of modern therapy of the sanest and most helpful type. The material is classified both pathologically and pharmacologically, affording ready reference and a safe and practical guide to efficient service at the bedside.

These three books, taken together, stand for a noteworthy accomplishment by the organized medical profession of this country. In the midst of the fog and stench, raised by the manufacturers and their satellites, we should remember that the Editor and General Secretary, whom they are attacking so vociferously and venomously, is the man whom we must thank not only for the organization itself but for this practical and profitable showing of its results and benefits.—M. G. MOTTER.

DIGEST OF COMMENTS ON THE PHARMACOPŒIA OF THE UNITED STATES OF AMERICA (Eighth Decennial Revision) and the NATIONAL FORMULARY (third edition.)

This book of 523 pages forms Bulletin No. 58 of the series of publications of the Hygienic Laboratory of the P. H. and M. H. S. It is the work of Drs. M. G. Motter and M. I. Wilbert, both indefatigable assistants in the Division of Pharmacology of this Laboratory. The book contains practically all the comments upon the eighth revision that were published in medical literature in the year 1906.

The passage of the Pure Food and Drugs Act, commonly known as the Pure Food Law, June 30, 1906, followed by an agreement between the United States and several foreign powers, converted our Pharmacopœia from a purely academic treatise into a legal standard. It may be remarked, however, that this added function will still remain the least important, and it will be the duty of the revisers of the book to see that the new edition shall not be encumbered with many useless substances, inserted chiefly in order that a legal status may be placed upon their purity or composition.

The Digest is divided into three principal parts: I, General Comments; II, International Standards; III, Comments on Official Articles.

The stupendous work involved in collecting the Digest may be partly appreciated when we consider that over 180 medical and pharmaceutical journals, from all parts of the world, have been searched and more or less extensively quoted from.

Under *General Comments* there are seven subheadings, and the comments under these headings take up the first 90 pages of the book. The subheadings are: 1, Legal status and development of the pharmacopœia; 2, Scope; 3, Non-pharmacopœial standards; 4, Analytical data; 5, Biological products; 6, Vegetable drugs, and 7, Pharmaceutical preparations.

Under *International Standards* are three subheadings: 1, International conference for unification of formulae for patent medicines (Brussels); 2, Review of foreign pharmacopœias, and 3, Comments on U. S. P., 8th edition, relative to the Brussels conference requirements; Spanish edition of U. S. P., No. 8. This part of the Digest occupies about 20 pages.

Under *Comments* on *Official Articles* an alphabetical list of all substances official in the 8th revision is given. This part of the book is the most voluminous, occupying over 400 pages, and will be the most useful doubtless to those who will make the Ninth Pharmacopœia, and every delegate to the May Convention should consult the book if he desires to acquaint himself with all the views which have been published.

The authors are to be congratulated on their work, and they will have the satisfaction of knowing that their labors will contribute not a little to the collection of the data, which the May Convention will utilize in making the ninth revision of the U. S. Pharmacopœia.—W. M. Barton.

The Oxidases and other Oxygen Catalysts Concerned in Biological Oxidations.—Bulletin 59, Hygienic Laboratory, U. S. P. H. and M. H. S., 1910. This is the title of an exceedingly valuable and well-documented monograph by the talented Director of the Division of Chemistry of the Laboratory, Dr. J. H. Kastle. The bibliography attached to the volume is probably the most complete extant upon this important biological subject, containing, as it does, 407 references to the literature.

The first part of the monograph deals with the history of the theories of oxidation, particularly organic. The next part, Chapter II, deals with the various oxidizing ferments which have so far been studied, including a very complete account of the development of our knowledge concerning the guaiacum reaction to which the name of Schoenbein is so intimately attached, and which forms, as it were, the corner stone of the oxidase edifice. Among the various oxidases studied are laccase, tyrosinase, oenoxidase, olease, luciferase, etc. The interesting subject of antioxidases is fully dealt with.

Chapter III deals with the peroxidases and catalases. There are apparently three different sets of substances concerned in organic oxidations: 1st. The oxidases which act upon atmospheric oxygen, rendering it sufficiently active to oxidize organic sub-

stances quickly; 2d. The peroxidases, which render active the oxygen present in peroxides, as hydrogen peroxide, organic peroxides (oxygenase), and 3d. Catalases which decompose peroxides forming inactive or atmospheric oxygen and water.

The nature and mode of action of these interesting substances is fully discussed in Chapter III of this monograph. According to Kastle it is not oxidase but rather peroxidase which is the most important ferment concerned in plant and animal oxidations, because it renders active the oxygen in a peroxide combination, whether it be hydrogen peroxide, an organic peroxide or an oxygenase. The questions of the relation of minute quantities of some of the heavy metals to the activity of oxidizing ferments, and that of peroxidase accelerators and auxiliary oxygen carriers, are treated quite completely. Lack of space prevents anything like an adequate review of the subjects contained in Kastle's monograph in this place. Suffice it to say that the work is the most complete in the language and will be consulted with profit by all who are interested in the biological and physiological problems connected with that mysterious group of substances, the oxygen carriers.—W. M. Barton.

Annual Report of the Surgeon General of the Public Health and Marine Hospital Service of the United States for 1909.—This report covers a great variety of subjects: the work of the service against the plague; against typhoid fever; pellagra; rabies; amebiasis; tuberculosis; hookworm disease; leprosy; supervision of viruses, serums and toxins; pollution of interstate waters; U. S. Pharmacopœia; milk; the rat; the mails; state and international relations; domestic, insular and foreign quarantine; medical inspection of immigrants, etc. It is a very interesting and instructive report, and everybody should read it in order to have some knowledge as to what the bureau is doing. A few extracts follow:

In San Francisco, to June 30, 1908, there were 159 cases of human plague, with 77 deaths; no case since that date. The last infected rat was found Oct. 23, 1909, and since that date, although 60,000 rats have been examined, none has been found infected. In the last 18 months there has been a great diminution of fleas in San Francisco. There is a plague infection in Contra Costa County, Cal., among ground squirrels. One case of plague was found at Oakland in 1908.

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Holmes, Mary, 227 1st street, n. e.
Hooe, A. Barnes, The Iroquois, 1410 M street, n. w.
Hooe, R. Arthur, The Royal.
Hough, William Hite, *Phar. D.*, St. Elizabeth Asylum.
Howard, Stanton Wren, 2725 13th street, n. w.
Hume, Howard, 1344 19th street, n. w.
Hummer, Harry Reid, Canton, S. D.
Hunt, Arthur LeRoy, *A. B.*, The Burlington.
Hunt, Presley Craig, 1815 M street, n. w.
Hunter, Montgomery, 1728 P street, n. w.
Hurtt, Harry, 1710 H street, n. w.
Hyatt, Franck, The Rochambeau.
Hyde, Chas. Wilbur, The Plymouth.
Hynson, Lawrence Maxwell, 1335 N street, n. w.
Jack, William Alexander, Jr., 1423 T street, n. w.
Jackson, Virgil B., The Brunswick.
Jenner, Norman Richards, 1110 Rhode Island avenue, n. w.
Jewett, Henry Merrill, Bloomington, Ill.
Johnson, Albert Eugene, 117 B street, s. e.
Johnson, Henry Lowry Emilius, 1821 Jefferson Place, n. w.
Johnson, Joseph Taber, *A. M.*, *Ph. D.*, 924 Farragut Square.
Johnson, Loren Bascom Taber, 1211 Connecticut avenue, n. w.

Johnson, Louis Alward, 709 C street, s. w.
Johnston, Henry V., 1324 Monroe street, n. w.
Jung, Franz August Richard, 1229 Connecticut avenue, n. w.
Jung, Sofie Amalie Nordhoff, 1229 Connecticut avenue, n. w.
Junghans, John Henry, *A. M.*, 417 D street, n. e.
Karpeles, Simon Rufus, 1102 5th street, n. w.
Kaufman, Harry M., The Burlington.
Kaveney, Joseph J., The Elkton.
Kebler, Lyman Frederick, 1322 Park Road.
Keith, Emma Corey Starr, 160 Tennessee avenue, n. e.
Kelley, John Thomas, Jr., 1312 15th street, n. w.
Kemble, Adam, *Phar. D.*, The Cecil.
Kerr, H. H., 1711 H street, n. w.
Kerr, James, 1711 H street, n. w.
Key, Sothoron, *M. S.*, 1716 H street, n. w.
Keyser, Carl Schurz, 1116 New York avenue, n. w.
Kimball, Arthur Herbert, *B. S.*, *A. M.*, The Burlington.
King, Albert Freeman Africanus, *A. M.*, *LL. D.*, 1315 Massachusetts avenue, n. w.
King, Ernest Frothingham, *A. M.*, Bond Building.
Kinyoun, Joseph James, 1423 Clifton street, n. w.
Kober, George Martin, *LL. D.*, 1819 Q street, n. w.
Kolipinski, Louis, *Phar. D.*, 631 I street, n. w.
Koones, Charles Kneller, 20 Iowa Circle, n. w.
Kramer, Thomas Best, 634 A street, s. e.
Kurtz, John, *Ph. B.*, 3142 P street, n. w.
Lamb, Daniel Smith, *A. M.*, 2114 18th street, n. w.
Lamb, Isabel Haslup, 2114 18th street, n. w.
Lamb, Robert Scott, The Cecil.
Lawrence, Albert Lynch, *Phar. D.*, 1102 L street, n. w.
Lawson, Huron Willis, 1117 Vermont avenue, n. w.
Lee, Thomas Sim, *A. B.*, Stoneleigh Court.
Leech, Daniel Olin, 1237 Massachusetts avenue, n. w.
Leech, Frank, 1372 Columbia Road.
Lehr, Louis Chas., *A. B.*, 1737 H street, n. w.
LeMerle, Eugene Lyman, 2011 Q street, n. w.
Lemon, Hanson Thos. Asbury, 903 M street, n. w.
Lewis, Duff Green, *A. B.*, 1311 14th street, n. w.
Lewis, Samuel Edwin, 1418 14th street, n. w.
Little, Richard Mitchell, 1213 East Capitol street.
Littlepage, Wm. Houston, The Alabama.
Lochboehler, George John, *Phar. D.*, 55 K street, n. w.
Logie, Benjamin Rush, St. Elizabeth Asylum.
Loring, Frank Boott, 1420 K street, n. w.
Lowe, Thomas F., 205 H street, n. w.
Luce, Charles Roscoe, 215 2d street, s. e.
Luckett, L. Fleet, 1419 Rhode Island avenue, n. w.
Lyon, Martha M. Brewer, 48 V street, n. w.
McArdle, Thomas Eugene, *A. M.*, 2439 Columbia Road.
McGuire, James Clark, *A. M.*, Cosmos Club.
Machen, Francis Stanislaus, 3114 16th street, n. w.
McCormick, John Henry, Mobile, Ala.
McKaig, Joseph Francis, *A. B.*, 2420 Pennsylvania ave., n. w.
McKay, James George, The Oakland.
McKimmie, Oscar Addison Mack, The Valois.
McLaughlin, Thomas Notley, 1226 N street, n. w.
McNally, Valentine, *A. M.*, *LL. D.*, 1417 N street, n. w.
McPherson, Dorsey Mahon, 1810 15th street, n. w.
Macatee, Henry Cook, The Ashley, 18th and V streets, n. w.
Mackall, Louis, 3044 O street, n. w.

Magee, Michael D'Arcy, *A. M.*, 1355 Corcoran street, n. w.
Magruder, Ernest Pendleton, *A. M.*, Emergency Hospital.
Magruder, George Lloyd, *A. M.*, Stoneleigh Court.
Mallan, Thomas Francis, 820 Connecticut avenue, n. w.
Malone, Wilson Prestman, 1510 H street, n. w.
Marbury, Charles Clagett, *A. B.*, 1015 16th street, n. w.
Marshall, Collins, 2507 Pennsylvania avenue, n. w.
Mason, Elijah Lumbia, 1909 14th street, n. w.
Mason, Robert French, The Toronto.
Mason, Wm. Beverly, 1219 Connecticut avenue, n. w.
Masterson, Wm. Lincoln, Stoneleigh Court.
Mazzei, Francis Anthony, 2 T street, n. e.
Medford, Homer Sanford, 138 C street, n. e.
Merriam, Arthur Carlos, 1201 New Jersey avenue, n. w.
Merrill, Walter Hibbard, *B. L.*, 1915 14th street, n. w.
Metzerott, John Hitz, 1110 F street, n. w.
Miller, Gideon Brown, *B. Sc.*, *C. E.*, 1730 K street, n. w.
Miller, Maurice Erwin, 1618 H street, n. w.
Miller, Thomas, 1616 7th street, n. w.
Miller, William Leon. 410 K street, n. w.
Mitchell, James Farnandis, *A. B.*, 1344 19th street, n. w.
Mitchell, Joseph Ernest, 510 13th street, n. w.
Moore, Mead, The Rochambeau.
Moore, Seth Eastman, 1706 Rhode Island avenue, n. w.
Moore, Wm. Cabell, 2321 18th street, n. w.
Moran, John Francis, *A. B.*, 2426 Pennsylvania avenue, n. w.
Morgan, Edwin Lee, 2315 Pennsylvania avenue, n. w.
Morgan, Francis Patterson, *A. B.*, 3445 Mt. Pleasant street, n. w.
Morgan, James Dudley, *A. B.*, 919 15th street, n. w.
Morgan, Wm. Gerry, *A. B.*, The Rochambeau.
Morhart, F. H., 1324 9th street, n. w.
Morris, George Gideon, The Laclede.
Morse, Edwin Emery, 1539 I street, n. w.
Motter, Murray Galt, *A. M.*, *B. S.*, 1841 Summit Place.
Mulcahy, Daniel Dominick, *Phar. D.*, 1216 North Capitol street.
Muncaster, Otho Magruder, The Rochambeau.
Muncaster, Steuart Brown, 907 16th street, n. w.
Mundell, Joseph J., 8 Maple View Place, Anacostia.
Murphy, Joseph Alexander, 943 L street, n. w.
Murray, Thomas Morris, 2107 Massachusetts avenue, n. w.
Neff, Wallace, *A. M.*, 930 16th street, n. w.
Nevitt, James Ramsay, 1820 Calvert street, n. w.
Newell, William Sawyer, The Champlain.
Newgarden, George J., *A. M.*, 1633 Mass. avenue, n. w.
Newman, Henry Martell, 2403 Pennsylvania avenue, n. w.
Nichols, John Benjamin, 1321 Rhode Island avenue, n. w.
Norris, Phebe Russell, *B. E.*, 1109 14th street, n. w.
Ober, George Clarke 210 B street, s. e.
O'Donoghue, John Alphonso, *A. M.*, 3311 N street, n. w.
O'Malley, Mary, St. Elizabeth Asylum.
Owen, Wm. Otway, The Louisiana.
Owens, Samuel Logan, 2418 Pennsylvania avenue, n. w.
Parker, Edward Mason, 2028 P street, n. w.
Parker, Henry Pickering, *A. B.*, 1518 Connecticut avenue, n. w.
Parsons, Alfred Vandiver, Takoma Park, D. C.
Parsons, Mary Almera, 1216 H street, n. w.
Perkins, Wm. Robert, *Phar. D.*, 942 P street, n. w.
Perry, George Nelson, 1316 Q street, n. w.
Petteys, Charles Volney, 1822 12th street, n. w.
Phillips, Wm. Fowke Ravenel, 1607 16th street, n. w.

Pickford, Edward F., *A. B.*, 1010 East Capitol street.
Pile, Mayne Marshall, 1929 S street, n. w.
Polkinhorn, Henry Alexander, 1201 M street, n. w.
Pool, Benjamin George, 945 Rhode Island avenue, n. w.
Portman, Adeline Elwell, *A. M.*, Bond Building.
Prentiss, Daniel Webster, *B. S.*, 1213 M street, n. w.
Ramsburgh, Jesse Houck, *A. M.*, The Portner.
Randolph, Buckner Magill, The Toronto.
Ray, Anthony Moreland, Tenleytown, D. C.
Reeve, Jesse Newman, 926 Farragut Square.
Reeves, William Pinkney, The Congressional, 100 East Capitol street.
Reichelderfer, Luther Halsey, 1721 Connecticut avenue, n. w.
Reisinger, Emory Wm., The Champlain.
Repetti, Frederick Francis, 149 B street, s. e.
Repetti, John Joseph, The Seward.
Rhett, Henry Johns, *A. B.*, 1307 Connecticut avenue, n. w.
Richards, Alfred, The Seward.
Richardson, Charles Williamson, 1317 Connecticut avenue, n. w.
Richardson, Edward Elliott, *M. S.*, 404 7th street, s. w.
Richardson, James Julius, 1016 14th street, n. w.
Richey, Stephen Olin, 732 17th street, n. w.
Riggles, John Lewis, The Champlain.
Robbins, Henry Alfred, 1750 M street, n. w.
Robins, William Littleton, The Rochambeau.
Rogers, Joseph Decatur, 721 8th street, n. w.
Roman, Frederick Ogle, 1337 R street, n. w.
Roy, Philip Seddon, 1200 Massachusetts avenue, n. w.
Ruedy, Robert Conrad, 625 Maryland avenue, n. e.
Ruffin, George Mendenhall, 1101 14th street, n. w.
Ruffin, Sterling, 1335 Connecticut avenue, n. w.
Savage, Linnaeus Samuel, Bennings, D. C.
Sawtelle, Henry Fenno, 3001 11th street, n. w.
Schneider, Elwin C., 1724 21st street, n. w.
Schneider, Francis Alphonse, The Burlington.
Scott, James Foster, *A. B.*, The Albemarle.
Seibert, Edward Grant, *Phar. G.*, 916 14th street, n. w.
Sellhausen, Ernest August, 640 G street, n. w.
Shands, Aurelius Rives, 901 16th street, n. w.
Shaw, John Watson, 1453 Rhode Island avenue, n. w.
Shoup, Jesse, The Roland.
Shute, Daniel Kerfoot, *A. B.*, 1719 De Sales street, n. w.
Simpson, John Crayke, 1421 Massachusetts avenue, n. w.
Smith, Dwight Gordon, *A. B.*, 3121 14th street, n. w.
Smith, Thomas Croggon, 1133 12th street, n. w.
Snowden, Edgar, The Tennessee.
Snyder, Arthur Augustine, 3051 N street, n. w.
Sohon, Elizabeth, 512 I street, n. w.
Sohon, Frederick, 512 I street, n. w.
Sothoron, Elmer Hezekiah, *B. E.*, 1921 I street, n. w.
Sowers, Wm. F. M., 1707 Massachusetts avenue, n. w.
Sowers, Zachariah Turner, *A. M.*, *Ph. B.*, 1707 Massachusetts avenue, n. w.
Sprigg, William Mercer, The Rochambeau.
Squire, Susan Johnson, Quincy, Mich.
St. Clair, Francis Alphonzo, *Phar. D.*, 1319 T street, n. w.
Staples, Aubrey Horatio, 1739 S street, n. w.
Stavely, Albert Livingston, *A. M.*, 1744 M street, n. w.
Steltz, Peter Henry, Jr., Room 207, Union Station.
Stone, Charles Granville, Brightwood, D. C.

Stone, Isaac Scott, Stoneleigh Court.
Stoutenburg, John Albertson, 116 2d street, s. e.
Street, Daniel Baen, 1000 9th street, n. w.
Strickler, Melchior B., 815 M street, n. w.
Strobel, Mary Louise, 16 R street, n. w.
Stromberger, Henry Holliday, 1745 North Capitol street.
Stuart, Albert Rhett, *A. M.*, 7 Dupont Circle.
Stuart, James, *A. B.*, 1315 12th street, n. w.
Suddarth, James Littleton, 817 North Capitol street.
Sullivan, T. J., 512 6th street, s. w.
Souter, Henderson, 3026 N street, n. w.
Suter, Wm. Norwood, *A. B.*, 911 16th street, n. w.
Sutherin, John Wesley, 1331 Vermont avenue, n. w.
Syme, Wm. H., The Laclede.
Talbott, John Allan, 1918 I street, n. w.
Tappan, Joseph Clarence, 11 R street, n. e.
Tayler-Jones, Louise, *M. S.*, The Woodley, Columbia Road.
Taylor, Lewis Harvie, The Cecil.
Thomas, Ada Rebecca, The Thomas.
Thomas, John Daniel, *A. B.*, 1413 20th street, n. w.
Thompson, Edgar Dorman, *A. M.*, 1247 North Capitol street.
Thompson, Joseph Ford, Cosmos Club.
Thompson, J. Lawn, 801 12th street, n. w.
Thompson, Millard Fillmore, *D. D. S.*, 484 Maryland avenue, s. w.
Thönssen, Wm. Julius Reichmann, 315 C street, s. e.
Tobias, Henry Wood, *B. E.*, 1424 Q street, n. w.
Toner, John Edmund, *Phar. D.*, 214 14th street, n. e.
Trimble, Robert S., 722 18th street, n. w.
Tubman, James Richard, 1222 11th street, n. w.
Tucker, Wm. Peyton, The Kenesaw.
Vale, Frank Palmer, The Toronto.
Van Rensselaer, John, *A. M.*, The Rochambeau.
Vaughan, George Tully, 1718 I street, n. w.
Vincent, Thomas Norris, *A. M.*, 1221 N street, n. w.
Wagner, Wm. F., *Phar. G.*, 501 L street, n. w.
Walker, Reginald Redford, 1710 H street, n. w.
Wall, Joseph Stiles, 1730 M street, n. w.
Walsh, Ferdinand Claiborne, San Antonio, Texas.
Walsh, John Edgar, 202 East Capitol street.
Walsh, Ralph, 1807 H street, n. w.
Walter, William Francis, *A. M.*, 487 H street, s. w.
Warren, George Walter, 1212 H street, n. e.
Waters, Charles L., 1414 Q street, n. w.
Watkins, Edgar Wm., 1373 Columbia Road, n. w.
Watkins, Samuel Evans, The Alabama.
Weaver, Clarence Arlington, 1614 Q street, n. w.
Wellington, John Ryder, *A. M.*, 1723 Connecticut avenue, n. w.
Wells, Walter Augustine, The Rochambeau.
Werber, Gustavus, *A. M.*, 1353 Q street, n. w.
White, Charles Stanley, The Farragut.
Whitson, Wm. E., 929 M street, n. w.
Wilkinson, Oscar, 1404 L street, n. w.
Wilkinson, Walter Watkins, The Burlington.
Williams, Tom A., 1758 K street, n. w.
Willson, Prentiss, The Toronto.
Wilmer, William Holland, 1610 I street, n. w.
Winter, Eugene Chas. Curtis, *Phar. D.*, 815 4½ street, s. w.
Wood, George Wm., 2906 P street, n. w.
Woodward, Wm. Creighton, *LL. M.*, 1766 Lanier street, n. w.

Wright, Hamilton K.,
Yarnall, John Hepburn, 3028 P street, n. w.
Yarrow, Henry Crecy, 2116 Bancroft Place, n. w.
Yates, Frederick, *LL. M.*, 1230 9th street, n. w.
Young, Wm. Glenn, 1315 N street, n. w.

Honorary Members.

1895—Ashby, Thomas A., 1125 Madison avenue, Baltimore, Md.
1875—Billings, John S., Surgeon, U. S. A., retired, 40 LaFayette Place, New York City.
1896—Fletcher, Robert, Army Medical Library, Washington, D. C.
1900—Jacobi, Abraham, 19 East 47th street, New York City.
1905—Keen, W. W., 1719 Chestnut street, Philadelphia, Pa.
1905—Musser, W. H., 1927 Chestnut street, Philadelphia, Pa.
1895—Osler, William, Oxford, England.
1895—Palmer, W. H., Providence, R. I.
1895—Shattuck, Frederick C., 135 Marlboro street, Boston, Mass.
1895—Sternberg, George M., Surgeon-General, U. S. A., retired, 2005 Massachusetts avenue, n. w., Washington, D. C.
1895—Wyman, Walter, Supervising Surgeon-General, U. S. P. H. and M. H. S.

Members by Invitation.

U. S. Army.

Dr. J. H. Allen,
" Wm. H. Arthur, Washington Barracks.
" B. K. Ashford, Washington Barracks.
" H. H. Baily, Ft. Myer, Va.
" Chas. F. Craig, Army Medical Museum.
" Wm. D. Crosby, Soldiers' Home, D. C.
" Carl R. Darnall, 1717 Riggs Place.
" Wm. T. Davis, The Benedick.
" M. A. Delaney, The Buckingham.
" Guy L. Edie, Army Dispensary.
" W. H. Forwood, 1425 Euclid Place.
" Valery Havard, War Department.
" J. B. Herrick, Soldiers' Home, D. C.
" D. C. Howard, 1735 New Hampshire avenue, n. w.
" J. B. Huggins, Washington Barracks.
" M. W. Ireland, War Department.
" Jefferson R. Kean, War Department.
" E. A. Koerper, 2234 Q street, n. w.
" L. A. La Garde, Army Medical Museum.
" Chas. Lynch, Ft. Myer, Va.
" Walter D. McCaw, Army Medical Library.
" Chas. F. Mason, War Department.
" R. M. O'Reilly, War Department.
" H. F. Pipes, Washington Barracks.
" F. L. Pleadwell, The Marlboro.
" Wm. Roberts, The Farragut.
" F. F. Russell, Army Medical Museum.
" J. O. Skinner, Columbia Hospital.
" P. F. Straub, War Department.
" Geo. H. Torney, Surgeon-General, Surg.-General's Office.
" Walter D. Webb, Washington Barracks.
" F. A. Winter, War Department.

U. S. Navy.

Dr. T. A. Berryhill,	Navy Department.
" H. G. Beyer,	1725 H street, n. w.
" J. C. Boyd,	Naval Museum Hygiene.
" W. C. Braisted,	Navy Department.
" Dwight Dickinson,	1806 R street, n. w.
" Wm. S. Dickson,	Naval Dispensary.
" M. S. Elliott,	Navy Department.
" J. M. Flint,	Stoneleigh Court.
" J. D. Gatewood,	Navy Department.
" E. H. Harrison,	Navy Department.
" A. A. Hoehling,	1748 Q street, n. w.
" P. A. Lovering,	Navy Department.
" J. A. Murphy,	Navy Department.
" P. M. Rixey,	Navy Department.
" C. F. Stokes, Surg.-General,	Navy Department.
" W. K. Van Reypen,	1021 15th street, n. w.
" J. C. Wise,	Navy Department.

U. S. Public Health and Marine Hospital Service.

Dr. J. F. Anderson,	1414 Girard street.
" H. D. Geddings,	The Westmoreland.
" A. H. Glennan,	Chevy Chase, Md.
" W. J. Pettus,	Marine Hospital Bureau.
" John Trask,	Marine Hospital Bureau.

Miscellaneous.

Dr. Nicholas Achucarro,	St. Elizabeth Asylum.
" Frank Baker,	1728 Columbia Road.
" I. W. Blackburn,	St. Elizabeth Asylum.
" David Day,	U. S. Geological Survey.
" S. H. Dickson,	2021 Q street, n. w.
" G. B. Fadeley,	Falls Church, Va.
Mr. G. H. Grosvenor,	Hubbard Memorial Hall.
Dr. E. R. Hodge,	Army Medical Museum.
" A. Hrdlicka,	U. S. National Museum.
" Reid Hunt,	1335 15th street, n. w.
" J. A. LeClerc,	Department of Agriculture.
" P. S. B. Sisco,	1 Iowa Circle.
" H. Smith,	1209 M street, n. w.
" L. Stejneger,	Smithsonian Institution.
" C. W. Stiles,	Hygienic Laboratory.
" G. W. Stiles,	4820 Iowa avenue.
" W. A. White,	St. Elizabeth Asylum.
" C. L. Wilbur,	1374 Harvard street.
" H. W. Wiley,	Department of Agriculture.

List of Active Members Now Living, Arranged According to Seniority in Membership.

Total Number of Active Members to Date, 939.

177. Warwick Evans.
186. Thomas Croggon Smith.
187. Joseph Ford Thompson.
190. Albert Freeman Africanus King.
195. Ralph Walsh.
199. John Wells Bulkley.
226. Henry Alfred Robbins.
240. Adajah Behrend.
249. Otho Magruder Muncaster.
259. Joseph Taber Johnson.
272. Daniel Smith Lamb.
273. Valentine McNally.
280. Cornelius Van Ness Callan.
307. Howard Hines Barker.
309. James Littleton Suddarth.
312. James Knox Polk Gleeson.
315. Charles William Franzoni.
316. George Lloyd Magruder.
323. Zachariah Turner Sowers.
328. George Martin Kober.
362. Harry Crècy Yarrow.
364. Henry Davidson Fry.
365. Franck Hyatt.
367. Stephen Olin Richey.
370. Harrison Crook.
372. Henry Martel Newman.
373. Samuel Shugert Adams.
375. Thomas Eugene McArdle.
376. George Wythe Cook.
379. Benjamin George Pool.
381. Francis Boott Loring.
383. George Nicholas Acker.
386. Wm. Francis Byrns.
388. Henry Lowry Emilius Johnson.
389. Josiah Robson Bromwell.
391. Llewellin Eliot.
393. Leon Leigh Friederich.
399. Raymond Thomas Holden.
402. Thomas Victor Hammond.
403. Louis Kolipinski.
406. George Clarke Ober.
412. Daniel Percy Hickling.
415. Millard Fillmore Thompson.
417. Middleton Fuller Cuthbert.
419. Ernest Frothingham King.
421. John Wesley Bovée.
422. Joseph Hammond Bryan.
424. Isidor Samuel Leopold Bermann.
426. Arthur Augustine Snyder.
428. Henderson Souter.
434. Thomas Collins S. Marshall.
435. Charles Williamson Richardson.
436. Daniel Olin Leech.
439. Wm. Leon Miller.
440. Thomas Francis Mallan.
442. James Dudley Morgan.
443. Mary Almera Parsons.
444. Philip Seddon Roy.
445. Thomas Morris Murray.
446. Ernest August Sellhausen.
448. Thomas Notley McLaughlin.
450. Edwin Lee Morgan.
451. Francis Besant Bishop.
453. Eugene Charles Curtis Winter.
454. Wm. Mercer Sprigg.
456. James Kerr.
457. Gaius Marcus Brumbaugh.
458. George Gideon Morris.
459. James Clark McGuire.
460. Charles Roscoe Luce.
461. Henry Buckmaster Deale.
462. Arthur Joseph Hall.
463. Neil Ferguson Graham.
464. Frederick Sohon.
465. Edward Arthur Balloch.
466. Wm. Henry Fox.
472. Charles Kneller Koones.
474. Wm. Holland Wilmer.
475. Louis Kelly Beatty.
477. George John Lochboehler.
478. Wm. Kennedy Butler.
481. Wm. T. Gill.
484. Wm. Sinclair Bowen.
485. Louis Mackall.
487. James Foster Scott.
489. Amelia Erbach.
490. John Thomas Kelley, Jr.
491. Charles W. Brown.
492. Elmer Hezekiah Sothoron.
496. Wm. Charles Fowler.
499. Charles Granville Stone.
501. Arthur Carlos Merriam.
502. Charles Read Collins.
503. Wm. J. Dillenback.
504. Ida Johanna Heiberger.
505. John Francis Moran.
506. Isaac Scott Stone.
507. Johnson Eliot.
508. Francis Alphonzo St. Clair.
510. Steuart Brown Muncaster.
513. Wm. Phillips Carr.
516. Wm. Creighton Woodward.
517. Daniel Kerfoot Shute.
518. James Morgan Barber.

519. John Edgar Walsh.
520. Jefferson Davis Bradfield.
522. John Van Rensselaer.
523. Albert Eugene Johnson.
525. Mayne Marshall Pile.
528. John Henry McCormick.
530. John Wm. Chappell.
532. Frank Tenney Chamberlin.
535. Floyd Vernon Brooks.
536. George Henderson.
539. Frank Leech.
540. Clarence Ruter Dufour.
541. Oscar Addison Mack McKimmie.
545. Wade Hampton Atkinson.
546. George Nelson Perry.
547. Daniel Baen Street.
549. John Ryder Wellington.
550. Thomas Norris Vincent.
552. John Edmund Toner.
554. Larkin White Glazebrook.
555. Charles Volney Petteys.
558. Emory Wm. Reisinger.
559. Wm. Bates French.
561. George Barrie.
565. Sterling Ruffin.
566. Presley Craig Hunt.
567. Louis Alward Johnson.
568. John Hepburn Yarnall.
569. Wm. Littleton Robins.
571. John Kurtz.
572. James Stuart.
574. Henry Joseph Crosson.
575. John Albertson Stoutenburg.
577. George Robert Lee Cole.
578. Wm. Francis Walter.
579. Charles Massey Hammett.
582. Hobart Southworth Dye.
584. Samuel Edwin Lewis.
585. Aurelius Rives Shands.
586. Samuel Evans Watkins.
587. Louisa Miller Blake
588. Oscar Henry Coumbe.
590. John Thomas Cole.
594. Harry Theodore Harding.
595. Duff Green Lewis.
596. John Henry Junghans.
597. Francis Patterson Morgan.
602. George Burton Heinecke.
603. Albert Rhett Stuart.
606. Robert W. Baker.
607. Thomas Ash Claytor.
609. Frank Palmer Vale.
613. Wilfred Mason Barton.
615. Sofie Amalie Nordhoff Jung.
617. Frederick Ogle Roman.
619. Clarence Arlington Weaver.
620. James Ramsay Nevitt.
621. Randolph Bryan Carmichael.
622. Edwin Emery Morse.
623. Charles Clagett Marbury.
624. Ada Rebecca Thomas.
625. Susan Johnson Squire.
628. Phebe Russell Norris.
630. Albert Livingston Stavely.
632. Adeline Elwell Metcalf Portman.
634. Walter Augustine Wells.
635. John Hitz Metzerott.
638. Hugh Clarence Duffey.
639. Virgil B. Jackson.
640. Wm. Lincoln Masterson.
641. Thomas Miller.
643. Noble Price Barnes.
644. John Daniel Thomas.
646. Edwin Marble Hasbrouck.
647. Frank Randall Hagner.
648. George Wm. Wood.
649. Robert French Mason.
650. Lewis Junius Battle.
651. Francis Anthony Mazzei.
652. Franz August Richard Jung.
653. Murray Galt Motter.
654. James Richard Tubman.
655. Linnaeus Samuel Savage.
656. Homer Sanford Medford.
657. Edmund Barry.
658. John Benjamin Nichols.
660. Wm. Peyton Tucker.
661. Abraham Barnes Hooe.
663. Monte Griffith.
664. Michael D'Arcy Magee.
665. Archie Ward Boswell.
666. John Crayke Simpson.
668. Maurice Erwin Miller.
669. Isabel Haslup Lamb.
670. Jesse Houck Ramsburgh.
673. Wilson Prestman Malone.
674. Charles Emory Ferguson.
676. Bernard Lawriston Hardin.
677. Wm. Gerry Morgan.
678. Thomas Dowling.
679. Robert Scott Lamb.
680. Wallace Neff.
681. Wm. E. Whitson.
683. George Boaz Corey.
684. Daniel Webster Prentiss.
686. Harry Hurtt.
687. Henry Alexander Polkinhorn.
688. Amelia Frances Foye.
692. Henry Johns Rhett.
693. Hanson Thomas Asbury Lemon.
697. Edward F. Pickford.
699. Wm. J. Reichmann Thönssen.
700. Ferdinand Claiborne Walsh.
701. Wm. Norwood Suter.
704. Thomas Sim Lee.
706. Eugene Lyman Le Merle.
707. Henry Cook Macatee.
708. Norman Richards Jenner.

709. Jesse Newman Reeve.
710. Robert Somervell Beale.
711. Mary Louise Strobel.
713. Samuel H. Greene, Jr.
714. Frank Eugene Gibson.
715. S. Clifford Cox.
716. Charles Loftus Grant Anderson.
717. Loren Bascom Taber Johnson.
718. L. Fleet Luckett.
722. Edward Grant Seibert.
724. Thos. Sanford Dunaway Grasty.
726. Albert Joseph Carrico.
727. Elijah Lumbia Mason.
728. Thomas Best Kramer.
729. Wm. Alexander Jack, Jr.
731. Gideon Brown Miller.
732. Frederick Francis Repetti.
734. Edgar P. Copeland.
735. Wm. Clarence Gwynn.
736. DeWitt Clinton Chadwick.
737. James Julius Richardson.
739. George Kasper Baier.
740. Neil Duncan Graham.
742. R. R. Farquhar.
743. John Lewis Riggles.
744. Carl Schurz Keyser.
747. Joseph Stiles Wall.
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749. Wm. Pinkney Reeves.
750. Luther Halsey Reichelderfer.
753. Montgomery Hunter.
754. Howard Fisher.
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757. John Paul Gunion.
758. Wm. Sawyer Newell.
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760. Wm. John Armstrong.
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762. Jesse Shoup.
763. Alfred Vandiver Parsons.
765. Francis Stanislaus Machen.
766. Henry Merrill Jewett.
767. Frank Lee Biscoe.
768. Truman Abbe.
769. Aubrey Horatio Staples.
771. Adolphus Bogardus Bennett, Jr.
772. George Walter Warren.
773. Joseph Francis McKaig.
774. Simon Rufus Karpeles.
775. Anthony Moreland Ray.
776. Gustavus Werber.
777. Walter Hibbard Merrill.
779. Melchior B. Strickler.
780. Daniel Dominick Mulcahy.
783. Albert Lynch Lawrence.
784. Henry Marshall Dixon.
785. Oscar Wilkinson.
786. Edgar Dorman Thompson.
787. Charles M. Beall.
789. John Joseph Repetti.
790. Taylor Boyd Dixon.
791. Joseph Clarence Tappan.
794. Henry Holliday Stromberger.
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798. Edward Elliott Richardson.
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820. Lewis Harvie Taylor.
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828. Francis Alphonse Schneider.
829. Frank Fremont-Smith.
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831. George Tully Vaughan.
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833. George Washington Boyd.
834. Homer G. Fuller.
835. John Dunlop.
836. Ernest Pendleton Magruder.
837. Robert Conrad Ruedy.
838. Seneca Bray Bain.
839. John Walter Hodges.
840. Richard Mitchell Little.
841. Samuel Logan Owens.
842. Thomas F. Lowe.
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844. Roy Delaplaine Adams.
845. Arthur Case Fitch.
846. J. Lawn Thompson.
847. Louis Charles Lehr.
848. Adam Kemble.
849. Frederick Yates.
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852. George H. Heitmuller.
853. Lawrence Maxwell Hynson.
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855. Charles Wilbur Hyde.
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858. Emma Lootz Erving.
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855. John Sheridan Arnold.
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936. Elizabeth Sohon.
937. R. Arthur Hooe.
938. John Allen.
939. Chas. Clark Ammerman.

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PARANOIA.*

By D. PERCY HICKLING, M. D.,

Washington, D. C.

Paranoia is derived from the two Greek words, *para*, beside, and *noos*, mind, and has been used from time to time to indicate many different mental conditions, so that without some definition as to what the author really means when he uses the word, confusion is apt to occur. Dunglison, in 1851, defined paranoia as a delirium and synonymous with dementia. Savage applies the word to a delusional form of insanity, while Potts, in 1899, uses it as a synonym for monomania, and many writers use it to indicate any condition where delusions of persecution form the leading symptom. The definition of Kraepelin is that, however, which is generally recognized, and seems to indicate the condition more clearly than those given by writers who have attempted to modify it. Kraepelin says: "This distinctive disease, in which delusions of being wronged and of over-self-esteem develop quite slowly without independent disturbances of emotional life or of the will becoming prominent, we shall call by the name of paranoia." This definition emphasizes the two great symptoms: the exalted self-esteem and the idea of grievances, when developing quite slowly, are the symptoms which lead to the diagnosis, and, while a large percentage of the cases show that the idea of injuries, conspiracies, etc., predominates, yet the exaggerated *ego* sometimes overshadows and seems to precede the idea of persecution, so that some authorities do not accept the exalted self-esteem as one of the cardinal symptoms, but rather believe that

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it is a result of the delusional symptom or, rather, the reaction of the delusion upon the normal mentality; nevertheless, it is so constantly associated with true paranoia, even though not always prominent, that my own experience agrees with Kraepelin; and it surely is a valuable symptom and aids materially in the diagnosis. The systematized condition of the delusion upon which so many authorities lay stress is probably the original idea of grievance or persecution mentally worked up into a system; the definition of Kraepelin clearly eliminates the so-called paranoia states—that is, conditions showing delusions which are more or less systematized in their nature and of recent development, associated with other mental symptoms; these conditions are found in nearly all forms of insanity, and especially in dementia precox, the alcoholic psychosis and in paresis.

Etiology.—Heredity plays an important part. Regis very aptly says that the cause is received as a germ at birth and develops at the appointed hour under the influence of the slightest cause; it often grows on an affected constitutional basis and usually shows some of the stigmata of degeneration, while it generally develops between the twenty-fifth and fortieth year of age; yet peculiar traits and eccentricities are often noted in early life, the exciting cause usually being attributed to acute illnesses, mental shocks, business reverses or disappointments. It is found to occur more frequently in men than in women, and, under the restricted definition of Kraepelin, about two per cent. of all insane cases admitted into special hospitals, are found to be suffering from paranoia. There are no pathological changes found in these cases, although Berkley, after examining a large number of cases, says that he found an abnormal typography of the cerebral cortex, the intersection of sulci and malposition of the convolutions; while an abnormal distribution of the cerebral vessels has also been noted.

Symptoms.—The symptoms of paranoia vary somewhat in each case, although the exalted self-esteem shown by an overrating of his services and capabilities and an idea of grievances and persecution, with a delusionary view of the world, are constantly found, while the other symptoms usually found in the insane are generally absent. Where a complete history can be obtained, besides the neuropathic ancestry there are often peculiarities of disposition during childhood; after a time there seems to come about a change in the disposition of the patient, the ordinary

occupation becomes distasteful and is somewhat neglected, he becomes suspicious of his friends and considers ordinary actions on their part as evidences of unfriendliness; in fact, he is morbidly sensitive. These false interpretations gradually assume greater importance, until delusionary persecutions become evident, which gradually increase and become systematized and the paranoiac character is said to be developed; small matters which usually pass unheeded furnish additional proof in his false interpretations and become additional factors in his delusions. The patient now becomes aware that attention is being attracted towards himself, and the persistence of things that annoy him finds him in the so-called hypochondriacal stage, or the period of subjection analysis which seems to be the natural outcome of the efforts of the patient to understand his own natural defects, and the exalted personality seems to be the outcome of this condition. It is explained by believing it to be the result of attributes which he believes that he possesses; or he thinks that it lies in his personal charms or that he has been born for a special mission or that he is of noble descent, or it may be the outcome of jealousy or the desire on the part of others to obtain secrets which he alone possesses. This is followed in time by the stage of persecution, with delusive explanation, in which the patient has a belief in the hostility of others, which he refers to as "they," while the delusions are expansive, and voices are often heard and delusions of the mystical or religious nature, as well as of erotic, political and jealous characters, sometimes occur, which progress in the same manner as those of persecution.

Finally, without regard to the form which predominates, he reaches the third stage, which is the stage of transformation of the personality, when the patient announces himself as being a direct descendant of Christ or a king, and begins to act accordingly. The delusions continue to exist until ended by dementia or death. The actions of the patient with paranoia towards his delusions and his persecutors are interesting, and have been classified as follows: First, he flees and endeavors to avoid his persecutors and their means of persecution; second, he defends himself, and seeks by all lawful means to put an end to his tormentors, using his own cunning, the law, the police and even the army and navy to bring about this result; and, finally, he takes the law in his own hands and protects himself by attack-

ing his supposed enemy, and it is from the elaboration of these delusionary stages and the actions based thereon that the most elaborate and interesting conditions of the patient are developed.

The above outline may be and often is somewhat altered in special cases; the symptoms of the third stage may be found in the first or second and those of the second stage in the first or third, the progress may be rapid from one stage to another or either of the stages may be prolonged and remissions may or may not occur; the onset, however, is always gradual and extends over a long period of time. The prognosis is unfavorable; no well-developed case of true paranoia ever recovers, although the paranoiac stages of other mental conditions often recover under proper treatment, while the cases which show a mild systematized delusionary condition do recover under proper treatment if begun early, after the appearance of the first manifestations; especially is this true if the delusions show no tendency to spread.

Diagnosis.—The diagnosis depends upon the slow onset, the exalted personality and the characteristic systematized delusions of persecution, the coherent thought and the absence of the other characteristic symptoms of the other forms of insanity. From dementia precox by the presence of mental and emotional deterioration. From paresis by the presence of the physical symptoms. From melancholia by its rapid onset and a disturbance of the emotional attitude, self-accusation and an absence of system in the formation of delusions. From the toxic psychosis by the rapid onset, the history of the drug habit or the usual symptoms of the autotoxines. From mania, depressive insanity by the sudden onset, the history of previous attacks, from the lack of system and the exalted self-esteem.

From what has been said there is no doubt that the patient with such symptoms is insane and should be treated accordingly, as it is a fact that the true paranoiac is the most troublesome and the most dangerous patient that psychiatrists have to deal with; and yet, when a patient whose insanity is in question has a comprehensive memory and whose outward bearing and actions are normal, who takes an interest in persons and events, reads books and papers intelligently, sleeps and eats well, makes new friends, is interesting to talk to, worries over things that should worry him and enjoys pleasant things, with no gross disturbances that can be discovered and seems to engage in business affairs with no

disturbance of the will or emotional life, it is hard for the layman, jurist or ordinary physician to pronounce such a man insane; and yet these are the pictures which are found in one and the same man. This difficulty is again made more troublesome when the patient realizes that he is under examination or on trial, and purposely avoids or denies his delusion.

In this connection I desire to call attention to the following case which has been recently under my care and observation.

A few weeks ago a white man 63 years of age was brought to one of the emergency hospitals in a condition which strongly resembled hypnotic sleep. Various methods were tried to arouse him, which were ineffectual; after remaining in this condition for several hours he was awakened by a nurse tickling the bottoms of his feet. In the course of time he was transferred to the Washington Asylum Hospital. He told a somewhat remarkable story of having received a package containing $26,000, of having carried it from the Hamilton House to the White Lot, there placed it on a bench beside him, and was reading some letters when an automobile stopped in front of him with three men in it, and he heard a voice which he recognized as that of Mark Tracy, a professional hypnotist, whom he had known more than twelve years before and who had hypnotized him on other occasions, commanding him to follow him. The patient fell asleep and remembers nothing until he again heard Mark Tracy's voice telling him to remember Olean (the city in New York State in which they first met), telling him to go to sleep and not talk to any one until he saw him again. He was then dropped into a stream of water near Falls Church, Va.; he got out of the water, scrambled up a hill, found an electric car line, was taken aboard the car and brought to Washington. He then fell asleep and woke at the hospital. In a written statement he claims that he remembers nothing from the time he heard Mark Tracy's voice telling him to come with him and the time he again heard his voice and felt himself in the stream; he says, however, that he remembers clearly everything which took place after that, although he was apparently in a hypnotic sleep, and he tells a pretty clear story of the incidents connected with his trip from the stream in Virginia to his awakening in the hospital.

He was admitted into the Washington Asylum Hospital March 7, 1910. He seemed in excellent health and spirits, and was

placed in an open ward. He was contented with his surroundings and got along very well with the other patients. Upon examination his reflexes were found to be normal and there was a very high arched palate; he had a good memory, his actions and outward bearing were normal and he took an interest in persons and events connected with his surroundings. He read books and papers, and, with the exception of his remarkable story of his adventures, there was nothing to raise the question of his sanity. After a conversation of several minutes I asked him who it was that was trying to harm him, and he promptly replied that the banks of New York City had for the last twelve years persecuted him, constantly following him through their agents, and had made several attempts to take his life; and when I asked him why they were persecuting him, he said: "You don't know who I am; I am D. J. Telfair, the inventor of the electrolytic process of extracting gold from the earth without mining or smelting." I then had him write a story of his life, which he was very willing and anxious to do; the manuscript contained 28 pages of closely-written foolscap paper, forming one of the most interesting stories which I have read for some time, and well worthy of publication. It is written in a neat hand, and could go to the printer with very little editing.

The first half deals with the history of the courtship and marriage of his father, his education and a visit to France during the latter part of the Civil War. He then tells of his experiments for obtaining gold from sea water and from rocks, of the successful results of his experiments and the construction of the machinery necessary to accomplish the desired result, of his visit to South Africa, his partnership with Cecil Rhodes, and of his realizing a little over $94,000,000, which he shipped to the Holland Trust Co., of 99 Cedar Street, N. Y. On his return to this country in July, 1896, after a quarrel with Rhodes and the onset of trouble in the Transvaal, he found his account with the Holland Trust Co. satisfactory, they having $88,000,000 to his credit, the sixteen million dollars difference having been a share, or rather a portion, set apart for one of his partners who had assisted him in his inventions. He then stated that he had a conference with forty of the leading banks of New York, whereby each bank was to take from one to three million dollars of his money on deposit. This arrangement being satisfactory, he went

to Chicago to find his friend and partner. On reaching Chicago he was assaulted, struck in the head and rendered unconscious. He awoke after several days with a complete loss of memory, not even knowing his own name, and having to be reeducated as a child would; then for seven months he had a number of adventures which occurred to him during his visit to twelve cities; they were all in the nature of persecutions, he being followed by strange men and assaulted several times. During this seven months he was called Chas. Brown, he having no recollection of his previous history. He now says that all the persecutions were due to the efforts of the New York banks to prevent him from drawing his money. He next arrived at Olean, N. Y., and for the first time made some friends who helped him to establish himself in business, which he says was quite successful. While at Olean he made every effort, through the aid of spiritualists, clairvoyants, etc., to find out who he was, when, on March 10, 1897, a professional hypnotist by the name of Mark Tracy put him to sleep, and when he awoke he was his normal self, D. J. Telfair. He says that the whole period of seven months, which he described so fully and in such detail, was a blank. He now tells of the loss of 103 diamonds which he purchased in South Africa for one million dollars, having been stolen from him while in Chicago, and that they were found by an agent of the U. S. Treasury and are now, he believes, in the custody of the Government, although he has been unable to recover them.

After he recovered his normal self he remembered completely his deposits with the New York banks and the details of his invention. The people of Olean, knowing that he was Telfair, formed a million dollar stock company to enable him to continue his electrolytic work in extracting gold from the earth. From this time until 1907 he was busy with developing his work and his efforts to get his money from the New York banks. The banks in turn have followed him, through agents, from place to place, and made attempts on his life by assaults, by drugs and by using the Maffata to accomplish his destruction. They also connived to place him in a lunatic asylum at Morris Plains, N. Y. While in the asylum, and confined in the criminal ward, by the aid of an attendant and a former friend worth thirty million dollars, by the name of Mark Anthony Brown, he concocted and carried out a scheme for purchasing a controlling interest in one

of the New York banks, and in that way recover the other deposits. This they succeeded in doing by expending $23,700,000, and when the deal was finally closed he not only obtained the evidence he wanted but made something over $40,000,000. In the meantime his machines were at work extracting gold, silver and copper, and as a result he had 3,500 plants at work. The gold thus obtained was shipped to Germany, and amounted to $160,000,000. He also took up the dairy business, his desire being to supply pure milk for children at a reasonable price. He also caused copper to tumble from 26 down to 10 cents, as he had 2,700,000 tons ready for delivery, which he threw on the market in order to bring about this reduction. He sold 1,500,000 tons, making about $375,000,000. He also says that he has a scheme by which he will force gold to sell for $5 per ounce, and he says the time is not far off.

He then went to Virginia and stayed for two months, perfecting his plans for a great dairy that would not be organized for profit but for the lives of babies. While on this work he went to Richmond and arranged for the purchase of dairy farms, and had $12,000 sent to him by his correspondent, A. B. Moore, which he received in a little black satchel. He was assaulted and the money taken from him; this was done through the hypnotic power of Mark Tracy. His experience in Richmond being almost identical with that in Washington, he ends up with the statement that he has 4,500 machines at work on gold, 1,000 machines at work on copper and 500 machines at work on silver; the annual income from these 6,000 plants being $3,150,000,000. He says that he does not trust the United States nor the flag of perfidious England, so that for the past two and a half years he has been subsidizing four world powers, giving them each three hundred millions a year to defend South America from all depredations by either England or the United States. He says that the only way to prevent the consequences of his selling gold at $5 an ounce in the United States is to destroy the U. S. national banking system. He has added a postscript, desiring his article to be taken to a member of Congress whom he names, and requesting him to bring to the attention of Congress as speedily as possible this statement, and so oblige millions of citizens, who are being robbed by the mother trusts, with the correct knowledge of the cause of present conditions and the cure.

It will be seen that in the history there is nothing mentioned in the life of his parents except the excessive use of alcohol by his father. The history of his youth is free from any items of interest connected with his mental condition ; the only marked physical stigma is the typical high arch and narrow palate. The date of the onset is hard to fix with any degree of certainty, it has been so gradual, but has probably existed since his return from South Africa. If this should be true, then his experiments with the gold furnish beautiful examples of retrospective falsification of memory; the story shows very well the over-estimation of his ability by his wonderful invention, his power to affect the gold and copper market, his desire to cope with the milk situation and his financial scheme while a patient in the insane asylum. The symptoms of persecution, all emanating from New York banks through many agents, including Mark Tracy and Maffata, and the many attempts to destroy him, are clearly evident, and extend over many years ; while his delusionary view of the world is apparent in everything he says and does. There is a marked absence of hallucinations in his case, except as exhibited by the voice of Mark Tracy, while the blending of facts with his delusions renders it impossible to state whether any minor statement is true or false. He has no insight whatever into the absurdity of any of his delusions, not even concerning his immense wealth. It is of interest to note that in this case the exalted self-esteem seems to have preceded the onset of his delusions, although the facts may differ from the story which he has written. The transformation of personality has not yet occurred. His actions up to this time, as far as I can ascertain, have been that of fleeing from and outwitting his persecutors, although there are slight evidences in his appeal to Congress and his subsidizing of foreign powers of his efforts to defend himself. The period of attack does not seem to appear at the present time, although it would seem as though he had arrived at a point where it might be expected ; for instance, if he should meet some one whom he believed to be Mark Tracy the consequences might be disastrous.

A brief discussion of this case from the medico-legal aspect is of interest and seems to me to be especially valuable. Let us consider first the situation when proceedings for his commitment in the District of Columbia are held. Should he care to make defense, which he very probably will, two medical experts will

testify that he is a lunatic and likely to become dangerous to himself or others; this will be supported by two lay witnesses who have been informed as to his mental condition before their examination of him. On the other side will be the accused himself, who will present the appearance of an educated gentleman who is perfectly capable, if he should so desire, of concealing his belief of his persecutions as well as his invention. His statement of his adventure in the District of Columbia will undoubtedly be believed by the lay jury, and much weight given to the story of his being mesmerized, which is not an impossibility. His manner of speaking and his actions will convince the jury and appeal to the court in favor of his sanity. In addition to his own testimony he can bring the gentleman and his wife with whom he lived continuously for the last two years, who will state that it is their belief that he is sound in mind, kind, goodhearted and a gentleman; he can also produce three other witnesses, of whom I know, who have seen him many times while in Washington and who will testify that they believe him to be of sound mind. Above all, if I am informed correctly, there are several physicians who observed him at the hospital who would testify that they did not observe any symptoms of insanity. With such a condition of affairs the jury will be sure to pronounce him of sound mind, for without his written statement or a confession of his delusions no one would convict him of insanity.

Now suppose for a moment that our patient had some quarrel or disagreement with the man with whom he had lived for two years, and that a day or two afterwards he had killed him with an ax; upon trial the defense should be insanity, and under the ruling of the court he would be compelled to show one of two conditions in order to escape capital punishment. First it must be shown "that the defendant is incapable of distinguishing right from wrong in reference to the particular act." Our patient can hardly be placed in this position, as he unquestionably had what is ordinarily considered to be a knowledge of right and wrong. Second, "the defendant must be acting under an insane delusion as to circumstances which, if true, would relieve the act from responsibility, or where his reasoning powers are so depraved as to make the commission of the particular acts the natural consequences of his delusion." This principle of law is probably based upon the old and now discarded idea of monomania or par-

tial insanity, in which the profession believed that a man could be insane upon one subject and of sound mind upon all other subjects. This erroneous belief, and the testimony submitted to courts of justice based thereon, has led to the principle of attempting to fix a degree of responsibility even though the man be insane, so that it has been often held that if the crime be connected, or is the outgrowth of the delusion, then the defendant is not responsible; but where the crime cannot be connected with the delusion, and especially where any of the usual motives for the crime seem to exist, the defendant has been held responsible and punished accordingly.

This condition of affairs I believe to be unfortunate, for the reasons that the medical witnesses or experts are attempting to fix the degree of responsibility, which is a question for the court and not for the expert. The medical experts' duties should begin and end with the purely medical question of whether the accused was sane or insane at the time he committed the act. Monomanias and partial insanities do not exist in the sense in which they are usually understood; this our case beautifully illustrates. Believing, as he does, his delusions to be true, every act must be influenced by them, he is completely under their influence, and to suppose that he is guided by ordinary reasoning, as sane men are, is preposterous. The theory of monomanias and partial insanities has done much mischief in psychiatry, but it has done infinitely more in medical jurisprudence, and the quicker it is discarded the better.

Authors Consulted.

Kraepelin's Clinical Psychiatry.
White's Outlines of Psychiatry.
Deffendorf's Clinical Psychiatry.
Regis' Practical Manual of Mental Medicine.
Wharton and Stillè, Medical Jurisprudence.
Hamilton's System of Legal Medicine.
Gierlich, Studies in Paranoia.
Friedmann's Contributions to the Study of Paranoia.

Dr. W. A. White expressed his pleasure in hearing the paper and the history of the interesting case reported. The whole subject of paranoia is too wide to attempt a discussion of it; but he wished to speak of some concrete features of problems to which paranoia gives rise. The term paranoia has been freely used for

about twenty years, many persons using it very loosely and without any very well-defined meaning; one hospital report indicated that as many as 50 per cent. of the inmates were paranoiacs, which is absurd according to present views, though it was no doubt true that 50 per cent. of the inmates had paranoid symptoms. As the term is now limited and restricted, paranoiacs will not constitute more than 1 per cent. or 2 per cent. of the inmates of hospitals for the insane. With respect to the mental state of paranoiacs they furnish the majority of the cases formerly called monomania, and still so called and recognized in law, under the conception that an individual may be insane and irresponsible as regards one idea or mental content, and perfectly sane as regards all others. Psychiatrists are at one in believing that monomania is impossible from a psychological standpoint, and is only possible under the concept that all ideas are simply stored in the brain as so many billets in a box, and that one may be defective without affecting the soundness of the others; this is quite absurd from the point of view of the psychiatrist. The idea of monomania is still held, however, by laymen and even by many physicians, and it is not unusual for the psychiatrist to meet in court contrary evidence on this point from physicians. Such evidence usually meets the judge's approval, as monomania has a sort of legal recognition. Judges, as a matter of fact, know no more about psychiatry than any other laymen, but the adjudication of causes involving the sanity of individuals proceeds under the advantage that judges are usually of superior intelligence and are experienced in the taking and weighing of evidence. The average physician is also fundamentally deficient in a knowledge of the principles of psychiatry. A peculiar difficulty of demonstrating the existence of paranoia in any individual in court is the necessity of passing in review the history of the paranoiac's whole life in order to portray the development of the symptoms upon which the diagnosis depends; the rules of evidence as they now stand often make this impossible. Thus, paranoiacs are most dangerous, and may be shielded from the consequences of their acts or from the disclosure of their insanity by conscienceless attorneys, because of the possibility of excluding necessary evidence and because of the ease with which paranoiacs may be coached to conceal their delusions and deny those false ideas which they most certainly believe. Dangerous lunatics may thus be discharged by juries.

The psychology of paranoia is most interesting. Dr. Hickling had said that in this disease there are disturbances of intelligence without emotional disturbances. In Dr. White's opinion this is impossible, because all mentality is a unit. Saunder had well described paranoia as the unfolding or blossoming of a pathological character. The dangerous feature of the paranoiac is the entire absence of dementia. The dement is not so dangerous;

his condition is evident, so that he that runs may read. The paranoiac, on the other hand, is not demented ; his mental powers are acute, may be brilliant, and his dangerous character lies in his ability to conceal his symptoms. Dr. White condemned the jury system for deciding questions of sanity as archaic, ineffective and unsafe.

Dr. P. C. Hunt had listened to the paper and Dr. White's remarks with much pleasure. He agreed with Dr. White as to the comparative rarity of paranoia. The definition of paranoia, as given by Dr. White, agreed with that of Tanzi ; that paranoia is a developmental anomaly in which the victim approaches primitive man ; is a mystic; and is guided by the small details unobserved by the majority. As to court proceedings, Dr. Hunt agreed that some changes are necessary, but thought that the legal profession had a side in the matter that should not be overlooked. Rules of evidence are bound by certain fixed and necessary laws. A system of insanity procedure in which physicians shall be advisory to the judge has been advocated, and may be adopted in criminal cases. Dr. Hunt referred to the procedure followed in committing District cases to the Government Hospital for the Insane, and expressed the belief that the jury system ought probably to be abandoned, as Dr. White had consistently urged. Dr. Hunt had discussed this matter with four of the judges of the District Supreme Bench; only one of them believes in the jury system, but this one is very positive in his belief. It is stated in the local press that Dr. White favors the appointment of a commission to consider the entire lunacy situation. Dr. Hunt hoped that when such a commission is finally created it will recommend the trial of all lunacy cases before a commission.

Dr. G. Wythe Cook said that the discussion had turned to the administration of lunacy law. The position taken by Dr. White is probably correct ; the determination of the mental state of the individual in court ought probably to depend upon the expert judgment of the psychiatrist—if we can depend upon the absolute integrity of the expert witness. But skepticism is bred by the fact that in various *causes celèbres* throughout the country both sides are able to present equally imposing evidence, given by alienists of equally esteemed ability to uphold the positions assumed by them. Juries may be dismissed from the determination of questions of sanity only when it may be accepted without question that evidence in the cause is given in truth.

Dr. Chappell said that it had been asserted by the speakers that laymen, physicians generally and lawyers are incapable of judging as to the sanity or insanity of paranoiacs. But it also appeared that even experts may be deceived by reason of concealed or dissembled symptoms. He agreed with Dr. White that the determination of these cases rests upon the study of all the

history of the individual; therefore, the inability of laymen, lawyers and lay physicians to judge of the sanity of a paranoiac may depend upon a lack of all the evidence, not upon inability to reach conclusions justified by the evidence.

Dr. Hickling said that the discussion had taken a different direction from what he had hoped. The legal rather than the clinical side of the matter had engaged attention. It is very easy to criticise the law, especially when it doesn't agree with one's own views. Lunacy laws are especially subjected to criticism; but much of the difficulty arises from physicians themselves. We are prone to go into court with pet theories and befuddle the court with conflicting opinions, and all because we have no common, fixed point of departure. The indefinite ideas and definitions of paranoia, monomania, etc., do not interest the court and only serve to confuse the question at issue. Courts want a definite opinion as to responsibility for a definite act at a definite moment; and here honest differences of opinion may arise. The trouble lies in not limiting medical testimony to the question whether the individual at bar is sane or insane, and most cases may thus be positively diagnosed. But the expert goes to pieces over the questions of attorneys as to degree of responsibility, knowledge of nature of act, whether able to advise with counsel as to conduct of defense, etc. All of which is beside the question. There are men in the asylums today who are not only capable of conferring with counsel but are capable of conducting their own defense with brilliancy, but they are none the less insane. Physicians are regarded by the community as charged with great responsibilities, and their judgment in medical questions is respected by the great majority; therefore, we should be most guarded in the attitude we assume on the large questions of the sanity of this or that individual in the public eye, and should express no opinions without all the evidence. Hasty and ill-founded opinions, formed without the knowledge or contemplation of all the evidence, may be responsible for the public's loss of confidence in the expert testimony of physicians in courts of law.

Not All The Time.—He was a man who stuttered badly. His friends finally persuaded him to consult a specialist about his affliction.

"Do you stutter all the time?" asked the expert.

"N-n-n-no," the sufferer answered, "only when I t-t-t-talk."

REMARKS ON APHASIA AND SOME OTHER DISEASES OF SPEECH.*

By TOM A. WILLIAMS, M. B., C. M. (Edin.),

Washington, D. C.

The term aphasia is so often erroneously applied that it is not out of place to discuss some of the disorders of speech often thus misnamed; for there is the greatest therapeutic importance in knowing whether a speech disorder is (1) a permanent organic defect, congenital or acquired, or whether it is (2) a functional disability due to intoxication, edema, or (3) arising purely from a vicious habit or fixed idea. A résumé of modern knowledge of this subject is the more useful in that the paper of Pierre Marie, of Paris, gave to many the impression that the classical views of aphasia were false; and those who have not examined the question are unaware of the fact that the further studies incited by Marie's article have established more firmly than ever the regional classification of aphasia.

It will be recollected that Marie denied the occurrence of *aphemia* in any form, by which term we denote the inability to utter words, although all the muscular movements for doing so can be managed when words are not in question. It is supposed that the *kinesthetic* images are unavailable, either by destruction of their center, the left third frontal convolution, or by interruption of the path connecting this center with the psycho-motor area concerned with moving the muscles of speech. Marie termed the loss of utterance *anarthria*, that is, absence of power to articulate—a most misleading application of a term always used in quite a different clinical sense; for it is applied only to cases which also show disability of the muscles to normally perform other acts as well as that of speech. This is clearly illustrated by the patient now shown.

Anarthria.—In her there was a gradual loss of clearness in the utterance of words and in the modulation of sounds; until now she has been utterly unable to articulate a single word or to make any but the most elementary sound, in which it is easy to hear that the vocal cords are quite passive. She is truly anarthric;

* Read before the Medical Society (a clinical lecture), April 20, 1910.

because, as you observe, her tongue is almost completely paralyzed ; the palate is highly paretic, as is the pharynx ; for she is unable to swallow solids at all, and liquids are taken only with difficulty and sometimes flow through the glottis. There is also a slight paresis of the lower facial and jaw muscles, with a tendency to dribbling of saliva. But she is not an aphasic ; could the muscles move she could utter the words she wants, of which she has a perfectly clear notion, just as she has of the act of swallowing although she cannot perform it. Her disability is caused by the very rare condition, the partial necrosis of the homologous areas of the two hemispheres which bilaterally govern the movements of the tongue, larynx, pharynx, palate and lower part of the face. So far as I know, this case is unique, for no other areas are implicated.

Dysarthria is the condition heard in bulbar paralysis. It is there accompanied by atrophy of the muscles of articulation ; but pseudo-bulbar paralysis resembles the case I have shown, for in it there is no muscular atrophy, but only an upper neurone paralysis, arising, however, from infracortical lesions, which are usually multiple and proceed from arterial sclerosis.

The cases of *aphemia* where the third frontal appeared intact are explained by serial sections, which show that there is an interruption in the white fibers of the centrum ovale between the third frontal and the temporal lobe (Nahaim, Congress of Geneva). The same observer reported two cases without motor aphasia in which the posterior two-thirds of the insula were destroyed.

That the so-called lenticular zone of Marie has nothing to do with *aphemia* is shown by ten cases which Compte cut in series, in which the lenticular nucleus was free from necrosis; although small areas of destruction of the internal capsule had produced the dysarthria of pseudo-bulbar palsy.

When an aphasia is partial it is usual for the substantives to disappear before verbs and adjectives, more especially in cases of cerebral tumors of the speech zone. The most likely explanation of this is that most substantives are used less often than the common verbs and adjectives. Besides, it would seem by their use by primitive peoples that the verb and adjective are more deeply rooted in speech, as they are first acquired.

The inability to pronounce certain consonants or speaking in a

nasal voice may be a congenital defect or fault of training; but the nasal and thick voice quite often occurs in the course of a *polyneuritis* from degeneration of the nerves to the palate. The prognosis in this case is quite good, as a rule.

Idioglossia.—The most important element in the prognosis of *dysarticulosis of childhood* is the perseverance and intelligence of the mother and nurse. This is illustrated by a musician's child, aged four and a half, who was under my care in Paris on account of almost unintelligible utterance. I was not sure whether this was entirely due to some congenital defect of the nerve apparatus. Had I given up efforts after the mother had failed in two weeks to produce the least improvement, the former diagnosis might have been too quickly acquiesced in. But as I was pretty sure that training could overcome at least part of the disability, the father was urged to take the child in hand; and his efforts, seconded by those of the mother, completed a cure in four months.

We may pass now to the *treatment of motor aphasia.* The chief difficulty to conquer is the annoyance and loss of mental balance the patient feels in not being able to perform the habitual automatic act of speaking. Thus *psychotherapy* becomes an important element of the training. A child is accustomed to being controlled and compelled to do things which he dislikes in the acquisition of arts. But it is very difficult for an adult to turn his energies into new activities. More especially is this the case with the difficult coördinations required for a new automatic speech apparatus. One of the best methods is the learning of verse and its repetition. Very important is the utilization of the motor images of the lips seen in a mirror, as in the training of deaf mutes

The better *prognosis* of aphasia as compared with aphemia is due to the constant reëducation the patient's surroundings give. He is assailed all day long with words by hearing or sight, and has to make efforts to comprehend in order to understand his fellows. On the other hand, so difficult are the first words of the aphemic that inertia is apt to get the better of him, and efforts to speak cease to be made. As soon, however, as an improvement begins, each year will bring further gain.

Perhaps the greatest factor in prognosis is the intellectual and moral status of the individual. If the memory is gone, hope is

small. If internal language has disappeared as well, the prognosis is bad. Simple methods of testing the internal language are for the patient to indicate the number of syllables in the word representing an object shown him.

In the diagnosis of aphemia it is important (1) to exclude dysarthria; (2) to exclude sensory aphasia, that is, word-deafness or word-blindness; (3) to test the power of mimicry and the repetition of words. Spontaneous mimicry only disappears as intelligence is impaired; (4) to test the singing power, which is often retained along with the vocalization, which in some persons is merely an automatic accompaniment of the music; (5) to test the reading power, which is nearly always at first slightly *alexic*, possibly through the mechanism which Von Monakow has termed *diaschisis*. This may be expressed simply as the interference with the function of one center on account of the impairment of another center with which the first is intimately connected physiologically; (6) writing with the left hand is sometimes possible; and it may be reversed as in a mirror; and the name can nearly always be signed, though rarely spoken in complete cases.

Differential diagnosis from sensory aphasia is easily effected by the transcription of letters, which is made in a servile fashion, and is really a drawing when there is word blindness. *Simulation* is detected by its complete mutism; the real aphasic can always utter some sound; and it is characteristic that he makes most violent attempts to speak, while the simulator remains quite calm and makes no sound at all. The pretended mute's mimicry is not defective; he has no difficulty in comprehension and is not likely to show *apraxia* unless he has been very well coached; besides, the true aphemic rarely attempts spontaneously to write with the contralateral hand, while a pretended or hysteric readily does so.

A few words on *apraxia*, of which aphemia is merely a special kind. The term is used to denote an inability to perform an act conceived and the substitution of some other act, an inability neither due to disorientation, amnesia, aprosexia (lack of attention), paralysis, ataxia nor agnosia (inability to recognize objects felt, smelt, heard and seen). It is very simply ascertained by demanding such acts as putting out the tongue, touching the ear, raising the leg, etc., or by the less simple series of acts used in lighting a cigarette, cutting up one's food, and the still less simple acts used in dressing one's self, sealing a letter, etc.

The act of putting a cheque in the waste basket and pocketing the envelope is not strictly of the same order, for it is due to *failure of attention.*

Still another form is characterized by a general contraction of all the muscles of the limb concerned in the desired acts, which are less and less well performed as they are more complicated; the order of excellence, as in Kleist's case, was (1) flexion and extension; (2) turning, sitting, arising; (3) going upstairs, standing on one foot, on tip toe; (4) impossible to leap, to draw a circle in air with foot.

The faculty of performing orderly movements, *eupraxia*, is believed to reside in the left third and second frontal convolutions. This center guides the coördinate purposive movement complexes of limbs on both sides. Therefore, the *corpus callosum* must be intact for its action. Its destruction does not seem to impair the *autokinetisms*, whether these are merely muscular *synergies*, such as (1) the extension of the wrist when the fingers are flexed, (2) the dorsiflexion of the foot when the leg is lifted, (3) the bending of the knees when the trunk is extended backwards; or whether they are certain *habitual movements*, such as (4) walking or (5) shaking hands.

SENSORY APHASIA is really a form either of *amnesia* or of *agnosia*, and, as failure of recognition is in reality lack of power to remember either the thing itself or to recall the connections which associate it with other things, amnesia becomes the chief factor in a sensory aphasia of the acquired type.

Agenesia Verbalis.—When congenital, moreover, it is the failure to fix the memories of words which gives rise to the word blindness which, perhaps, occurs to a greater or less degree in about two per thousand school children, who never acquire the power of reading with facility as a result of their school training. The powerful stimulus of some interest in after life, however, may call forth the extra effort needed for such defectives to learn to read freely. Thus, one of Hinshelwood's cases (*Brit. Med. Jour.*, 1907, Vol. II) taught himself to read in four years through his interest in the football reports, over which he poured for four hours every evening in order to follow the game for which he had a passion. Seven years at school had hardly taught him to read a word.

Patients of this type can in reality always be taught to read if

placed in a special class where the tactile images are cultivated by the use of blocked letters. It is believed that the defect is due to hereditary insufficiency of the associational area between the visual center and the word-hearing center. We do not know whether their training is made possible through the use of the right-side center or whether it is not accomplished entirely by the association of kinesthetic images with the sight of the written words, as in the deaf mute.

The condition must be *diagnosed from ocular* defects by (1) the size of the letters making no difference to the reading power of the patient; (2) by the patient's ability to copy the letters; (3) by the fact that figures and some few words and letters are readily recognized. The general mental defect of *imbecility* is excluded by the fact that the child's auditory memory is quite good, and that all school tasks except reading are normal.

The same principles of diagnosis and educative treatment may be applied to *adult alexics;* but the prognosis is qualified by the facts mentioned when discussing aphemia, viz: the difficulty of a mature person to recommence the kind of education which every infant performs as a matter of course.

Word deafness may be classified into three degrees. In the most grave the patient does not know he is listening to speech at all when words are uttered in his presence. In the second he does not recognize the language; and, thirdly, in the slightest degree he does not understand the meaning; the extent of this failure may vary from complete want of comprehension to an uncertainty, or confusion only in complicated sentences.

The *prognosis* of the latter cases is fairly good when the cause can be suppressed; for it would seem that considerable education of the auditory word center in the first temporal convolution is possible; and the patient can hardly help automatically listening to the words of his companions.

As the textbooks contain clear and full descriptions of this affection I shall not enlarge, except to point out the distinctions between it and the *functional aphasias and amnesias of psychic origin.* The best way to do this is by the citation of cases recently seen.

The first, seen with Dr. Balloch, is an example of aphasic amnesia, of organic cause. It is introduced by way of contrast. It is characterized by the loss of power to express the thought in

words, although the patient *feels* that the idea is there, and can sometimes explain it in a periphrasis. My patient, even after ten minutes study, is unable to recall and relate in words the story of Noah Webster. The following is her account, with much questioning: It begins with N. *Noel?* No. *Noah?* No. *Newel?* No. *Noah?* That's like it. *Recognizes Webster. College?* Yale. *Profession?* Lawyer. *What did he do when young?* Taught school. *What else?* Don't know. *A book?* Yes. *Kind?* Don't know. *Dictionary?* I suppose. *Date?* 1790, too late. *Why?* My idea earlier, but I don't get the rest. *Was it in war time?* The other one. *Name?* ——. *Against whom?* All other kinds in United States. *Civil?* Yes, that is it. *Date?* 1861. *Did Webster live then?* Too soon. *Against whom, then?* He was not old enough; don't remember now, though I taught school.

She did not recollect the capital of Germany, nor in what country Edinburgh is situated, although she had once been a school teacher; but she could reply quite intelligently to any question if she remembered the word to answer, and she could read and write; but in the latter there were frequent omissions of words, of which she was quite aware and deplored it. She could not recall the word she wanted, although she at once recognized it when proffered. Her condition intermitted more or less, but never became normal. The importance of the case lay in its diagnosis from a purely psychic amnesia; and to ascertain whether it was not due to a chronic intoxication, or whether it was caused by the cerebral necrosis of arterial defect, as I finally decided, as metabolic treatment failed to ameliorate the condition, and its oscillations were very slight. That it was not a psychic case is shown by its entire unamenability to psychotherapy, by its genesis apart from any psychological cause, and by the nature and extent of the responses to psychometric tests too long to detail here.

The second case, seen with Dr. Claytor at the Garfield Hospital, is an example which may be called *hysterical aphasia*, in which the fixed idea not to speak was a *reaction of defense* against the fear of relating some intensely humiliating experiences. Indeed, the patient tried to chase them from his thoughts; and the aphasia was partly in consequence of this.

Other Psychic Cases.—It is comparable to the reaction of one of

Janet's patients, who, because she wished to conceal a fault from every one, began to lie, not only about that but about everything else that she spoke.

Another case of Janet's, on the contrary, became completely aphasic as a result of trying to conceal thought. The mechanism of a remarkable case described by Dr. Hickling is similar, but is derived from a fixed idea, which is only part of a general paranoiac trend. The patient becomes aphasic on account of the delusion that he has been ordered not to speak for so many hours by his hypnotiser.

Formerly the psychological mechanism of hysterical aphasia was a mystery; but modern *psycho-analysis* has taught us the why and wherefore. Case No. 2 is a very common type.

Another case which reacted in this way was conduced to by a metabolic defect, which led, also, to *narcoleptic confusion*. Complete deafness with aphonia was the result of a most painful experience in a hospital in Idaho. The condition was recovered from quite suddenly by the stimulating touch of a detective.

Cerebral Tumors as Causes; Faulty Diagnosis.—Hystero-neurasthenia is quite commonly diagnosed to explain paraphasia, which later proves to be due to a cerebral tumor. Such was the case of the girl whom I observed in Paris, and who was treated as a neurotic and isolated for several months by so eminent a neurologist as Déjérine. In the autumn she entered the clinic of Ballet with a well-marked amnesic aphasia for substantives, very similar to that of the first case here reported. She had all along been inattentive and frivolous in her ways and had shown slight mental dulness. I watched the slow development of the papilloedema, which clinched the diagnosis, and a tumor was found in the left temporo-parietal sub-cortex.

Such recurring attacks of aphasia must be distinguished from those due to ophthalmic migraine, for both may be accompanied by headache and vomiting. The jargon-aphasia of ophthalmic migraine is, however, almost always accompanied by hemianopsia, and the attacks are of very short duration, and separated by a period of complete good health; whereas, a careful examination of these tumor cases will reveal a defect of speech even between the exacerbations.

In conclusion, this sketch of a vast and complicated subject is designed to emphasize the extreme importance of early diagnosis

of forms of aphasia which are purely psychic[5], and which are most amenable to proper treatment when taken early. Even in the organic forms early detection of the cause may enable us to impose means for its suppression and thus to arrest, even though not to cure, the patient's disease. Such are the cases of temporary aphasia which occur in the course of arterial sclerosis through the variations of blood pressure and osmosis in the weakened blood vessels. The edemas of uremic states are also of this variable type.

Lastly, variable amnesia and slow comprehension may be one of the earliest signs of intracranial new growth, which may be revealed in an examination by one skilled in neurological technique[6].

I have said nothing of the defects of speech arising from faulty habits of mental attitudes, such as stuttering, lalling, lisping and the tics of speech, coprolalia, etc., in which the patient is compelled to utter obscene remarks, or bark or cough. These are psychasthenic phenomena and form a chapter of neuropathology in themselves[7].

REFERENCES.

1. *Semaine Med.*, 1906.

2. Déjérine, *Presse Med.*, 1906–1907. Also, Discussion sur l'Aphasie, *Rev. Neurol.*, 1908, etc.

3. *Thèse de Paris*, 1900, Les Paralysies Pseudo-Bulbaire.

4. Author, The Trend of the Clinical Concept of Hysteria. *Boston Med. Jour.*, March, 1909.

5. See Considerations as to the Nature of Hysteria. *International Clinics*, 1908, Vol. III.

6. See works of Duret, Oppenheim, Bruns, etc. Also author, Intracranial Neoplasms, *Cincinnati Lancet-Clinic*, April 30, 1910.

7. Raymon and Janet, *Les Obsessions et la Psychasthènie*, Paris, 1903.

LITTLE JOHNNY'S FATHER is a physician and his mother is a Christian Scientist. Recently the little boy was threatened with appendicitis. His sister, going into the room where Johnny was in bed, found a very indignant little boy, who made this complaint:

"Father and mother won't let me talk slang, but when I told mother how sick I was she said 'Forget it,' and when I told father he said 'Cut it out.'"—*Judge.*

LAËNNEC AND THE STETHOSCOPE.

By JAMES D. MORGAN, M. D., and DANIEL S. LAMB, M. D.

LAËNNEC: THE GREAT INTERNIST.*

By JAMES DUDLEY MORGAN, A. B., M. D.,

Washington, D. C.

In studying the life of Laënnec and many other medical men, who had become famous about his time, it is constantly brought to mind that every one who had reached eminence in our profession at that time had done or was doing something in original work—be it in the line of investigation, as was Corvisart at La Charité; in observation, as Laënnec at Necker; in correlation, as Louis at des Enfants and at La Charité; or in dissection and pathological anatomy, as Dupuytren at École de Médecine, and later at Hôtel Dieu in clinical surgery.

The clinical and ward teaching of the Dutch Hippocrates, Boerhaave, at Leyden in 1714, John Rutherford at Edinburgh in 1747, and Van Swieten and De Haen in 1765 at Vienna, was pursued at Paris by Corvisart, Bayle, Broussais, Laënnec, Louis, Chomel and others.

The "Inventum Novum" of Auenbrugger, 1761, on percussion, was never fully exploited and accepted until Corvisart in his writings and Laënnec in his hospital clinics showed the simplicity and great usefulness of this great discovery of Auenbrugger. As Sir Thomas Watson, in 1836, in his practice of medicine, which is a classic today, says: "It is really surprising what simple and useful laws of physics we constantly neglect and overlook; I am sure," he continues, "that I had a practical acquaintance with the principle of percussion long before I knew anything of physics, and so, I make no doubt, have most of you. Many a time, when wishing to know whereabouts I might drive a nail firmly into a wall, I have tried with the hammer to find which was brickwork and which was wooden joist; and percus-

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* Read, as a member of the Medical History Club, before the Medical Society of the District of Columbia, April 27, 1910.

sion is an art in daily use for similar purposes with carpenters and bricklayers." Yet it does not appear to have been thought of by physicians till the middle of the last century, when Auenbrugger, after studying its results for seven years, as he tells us *inter taedia et labores*, published at Vienna his "Inventum novum, ex percussione thoracis humani, ut signo, abstrusos interni pectoris morbos detegendi." This was almost totally neglected, however, until Corvisart's work on diseases of the heart brought it into general notice.

Réné Théophile Hyacinthe Laënnec was born February 17, 1781, at Quimper, Lower Brittany, France, and was so unfortunate as to lose his mother when he was only five years old. It is a fact worthy of notice that his mother died of pulmonary tuberculosis, a disease of which Laënnec died at the age of forty-five. After the death of the mother the father very soon sent his son, Réné, to live with his uncle, a curé; later he went to live with another uncle, who was a professor in the faculty of the medical school at Nantes. Here Laënnec's association and opportunities led him into medicine, and he gave some time to chemical and laboratory work, to listening to lectures and to observing the sick in the military hospital at Nantes. At the age of nineteen (1800) he went to Paris and attended the clinics of Corvisart at La Charité; this was a most fortunate association—one as master, the other as pupil.

Boerhaave, who occupied the chair of medicine at Leyden, had attracted the attention of the medical world by his bedside teachings, and he was drawing students from every quarter of the globe.

On the death of Boerhaave Minerva Medica went to Edinburgh, then to Vienna for a short time, next to Paris, where she lived the first four decades of the nineteenth century; returning to Vienna, she found Rokitansky and Skoda; and now, at the commencement of the twentieth century, she can be found at Berlin.

At the dawn of the nineteenth century Bichât was attracting attention at the Hôtel Dieu and Corvisart in his practical medicine was drawing the students to Paris as they had never come before. But a few years more and we find Laënnec at Necker, Dupuytren at the Hôtel Dieu and Broussais at La Pitié. The effectiveness of this galaxy was soon still further strengthened

by Louis, who was made famous by his researches on pulmonary consumption and typhoid fever.

A coterie of physicians who have helped to make American medicine was attending many of the Paris clinics during the period of Laënnec's term; they brought back with them the best from all, teachings which were productive of great good in the cities of Boston, Philadelphia, New York, Baltimore, etc., not only to the public, but also to the medical students of those days. Oliver Wendell Holmes, when he was studying medicine in Paris, said he had learned especially three things: "Not to take authority when I can have facts; not to guess when I can know, and not to think a man must take physic because he is sick!"

Those who have read "An Alabama Student" can get more easily, perhaps, in that pathetic and interesting little story, a better insight into the everyday life, with its seeming hardships and actual pleasures and gratifications of the American medical student in Paris in those days and later, than in any other narrative of the kind.

"Why did Minerva leave Paris, where she was so faithfully served by Bichât, Laënnec, Louis and others? As she was in Greece, in Alexandria, in Rome, in northern Italy, in France, so she is now in Germany," and may we hope that the Æsculapian center one day may be with us in the new world.

Laënnec's master, Corvisart, at the time of Laënnec's coming to Paris, had adopted Auenbrugger's work on percussion, and had himself translated it, with notes, into French. At the beginning of the nineteenth century he and Laënnec, his pupil, were probably the only physicians in the world who resorted systematically to this simple and useful procedure of percussion. From this "inventum novum" of Auenbrugger (1761) we may date the introduction of modern clinical methods into medicine.

Fortunately for science, it happened at this time that the First Consul, Napoleon, was a little impatient and perplexed as to his continued bad feeling, and being somewhat dissatisfied with his other physicians, Pinel and Portal, called in Corvisart. The thoroughness of his examination and his extraordinary method of percussion at once appealed to Napoleon as most sensible and useful for careful diagnosis, and he at once installed Corvisart as his regular adviser.

Laënnec, during this time, was working hard as a pupil in the

LAËNNEC AT NECKER HOSPITAL, PARIS.

clinics at La Charité, and had compiled most thorough notes on the examination of 400 patients, using extensively the method of percussion and that of immediate listening to the chest.

It was in 1816, Laënnec writes, that "I was consulted by a young woman laboring under general symptoms of diseased heart, and in whose case percussion and the application of the hand were of little avail on account of the great degree of fatness. The other method, putting the ear to the heart, being rendered inadmissible by the age and sex of the patient, I happened to recollect a simple and well-known fact in acoustics, and fancied it might be turned to some use on the present occasion. The fact I allude to is the great distinctness with which we hear the scratch of a pin at one end of a piece of wood on applying our ear to the other. Immediately, on this idea, I rolled a quire of paper into a kind of cylinder and applied one end of it to the region of the heart and the other to my ear, and was a little surprised and pleased to find that I could thereby perceive the action of the heart in a manner much more clear and distinct than I had ever been able to do by the immediate application of the ear. From this moment I imagined that the circumstances might furnish means for enabling us to ascertain the character, not only of the action of the heart, but of every species of sound produced by the motion of all the thoracic viscera, and, consequently, for the exploration of the respiration, the voice, the rhonchus, and perhaps even the fluctuation of fluid extravasated in the pleura or the pericardium. With this conviction I forthwith commenced at the Hospital Necker a series of observations from which I have been able to deduce a set of new signs of diseases of the chest, for the most part certain, simple and prominent, and calculated, perhaps, to render the diagnoses of the diseases of the lungs, heart and pleura as decided and circumstantial as the indications furnished to the surgeon by the introduction of the finger or sound, in the complaints wherein these are used.

"The following work, which contains the result of these observations, I shall divide into three parts. In the first I shall detail the various methods of exploration by which we obtain a knowledge of the diseases of the chest; the second will contain an account of the diseases of the bronchi, lungs and pleurae; the third, of the diseases of the heart and its appendages."

It is related that what first attracted Laënnec's attention to the

use of a hollow tube for auscultation was when passing through the court of the Louvre he saw some children about a long beam, and one would put his ear at the end of the beam and listen while the others tapped lightly.

Laënnec's analyses of his cases always received the greatest attention and encouragement from Corvisart, and it was but natural that Laënnec, on his discovery of what he then called mediate auscultation, and the instrument which he called a stethoscope (στηθος, pectus, and σκοπεω, exploro), should submit his invention and his hopes that perhaps he had discovered a means of distinguishing the more difficult diseases of the heart and lungs. The older man was quick to see the great importance of the discovery, and not only encouraged Laënnec in his labors, but also helped to popularize the method of mediate auscultation.

Auscultation itself was prophesied by Robert Hook, M. D., in 1705, and indicated by Monsieur Double in 1814; but there is no reason to believe that Laënnec was acquainted with these opinions, and if he had been he derived no more from them than from the writings of Hippocrates, nor does it detract from his merits as the discoverer of mediate auscultation and the inventor of the stethoscope.

The invention of the stethoscope did not at first excite much interest in the profession generally. It was announced in the Edinburgh medical journal of the day in these terms: "M. Laënnec has discovered by interposing a tube of paper or wood between the ear of the observer and the chest of the patient much information may be acquired concerning the diseases of the chest. The pulsations of the heart are thus rendered more audible, and in phthisical patients the voices seem to proceed from the chest when one end of the tube is placed over those places where there are tubercles, and according as the sound is clear or rattling we may judge whether the cavity is clear or contains pus." Sir John Forbes said it was three years or more before any article appeared in British medical journals about the use of auscultation.

In his very earliest researches with auscultation Laënnec attempted to ascertain the "differences which the sound of the voice within the chest might occasion. In examining several subjects with this view he was struck with the discovery of a very singular phenomenon. In the case of a woman affected with a slight bilious fever and a recent cough, having the char-

acter of a pulmonary catarrh, on applying the cylinder below the middle of the right clavicle while she was speaking, her voice seemed to come directly from the chest, and to reach the ear through the central canal of the instrument. This peculiar phenomenon was confined to a space about an inch square, and was not discoverable in any other part of the chest. Being ignorant of the cause of this singularity, he examined, with the view to its elucidation, the greater number of the patients in the hospital, and he found it in about twenty. Almost all these were consumptive cases in an advanced stage of the disease. In some the existence of tubercles was still doubtful, though there was reason to suspect them. Two or three, like the woman before mentioned, had no symptom of this disease, and their robustness seemed to put all fears of it out of the question. Notwithstanding this, he began immediately to suspect that this phenomenon might be occasioned by tuberculous excavations in the lungs. The observation of the same thing in patients who had no other symptoms of phthisis did not appear to him conclusive against the correctness of his suspicions, because he knew it to be by no means unusual to find in the lungs of persons carried off by some acute disease, and who had never shown any sign of consumption, tubercles not only softened but excavated, and forming the very case denominated ulceration of the lungs. The subsequent death in the hospital of the greater number of the individuals who had exhibited this phenomenon, enabled him to ascertain the correctness of his supposition; in every case he found excavations in the lungs of various sizes, the consequence of the dissolution of tubercles, and all communicating with bronchial tubes of variable size."

Laënnec was nineteen years of age when he came to Paris to continue his medical studies, and it was very soon that he attracted the attention of Corvisart, who was then professor of medicine and attending physician at La Charité. Laënnec won a prize in surgery and medicine at the Concours in 1801 and 1802; and while still a student he made several interesting and valuable reports on cases in the hospital; he reviewed Bell's "Treatise on Venereal Diseases" and published a treatise on peritonitis and on capsule of the liver. In 1804 he graduated, and for several years was editor-in-chief of the *Journal de Médecine*. He wrote ex-

tensively, and in 1816, when thirty-five years of age, was appointed visiting physician to the Necker Hospital.

In May, 1816, Laënnec presented his report on mediate auscultation before the Société de l'École, and in June, 1818, to the Académie des Sciences. He now set about the publication of his book, but with his other duties of hospital work and private practice, which had now grown very extensive as well as remunerative, his health soon broke down. He took a rest at his old home in Brittany on the French coast, but this was only after much persuasion, being no exception to the common rule in declining to recognize in himself that which he would have been the first to discover in another.

The rest at the seaside did him good ; his hacking cough subsided, he slept and ate better, and soon gained strength and weight. In November, 1818, he returned to Paris, resumed his duties, and the next year, 1819, his book appeared, entitled "Auscultation Médiate ou Traité du Diàgnostic des Maladies des Poumons et du Cœur, Fondé Principalement sur ce nouveau Moyen D'Exploration. Par R. T. H. Laënnec." The greatest stimulus ever given to internal medicine was the discovery of auscultation; and the publication of Laënnec's book not merely introduced a new method, but was also a treatise on diseases of the heart and lungs. Sir William Osler affirms that the contributions of Laënnec to the study of diseases of the heart, the lungs and the abdominal organs really laid the foundation of modern clinical medicine. Dr. Thomas Addison asserts that Laënnec contributed more towards the advancement of medical art than any other single individual, either of ancient or of modern times. What would clinical instruction be without physical diagnoses? Rokitansky says that "had Laënnec done nothing else for medical science his discovery of emphysema, and of the causes giving rise to it, would have been sufficient to render his name immortal."

It is today as it was yesterday : a zealous and careful student or interne is to his professor or master an inspiration, an incentive for all that is good. With a young and receptive mind and observant eye, a student like Laënnec and a master like Corvisart hand down to posterity the arts of percussion and auscultation. Sir James Paget, as an interne at St. Bartholomew's Hospital, discovered the cocoon of trichina spiralis ; Auenbrugger, at Vi-

enna, as a student, made use of percussion; Renucci observed to his master, Alibert, that the disease called "gale repercutee" that plagued all Paris, even the nobility, was due to a mite, an insect; Bichât so charmed his master, the great surgeon Desault, that he adopted him as his son; the celebrated physician, Chomel, was in such sympathy with the numerical method of Louis that he made possible the valuable and lasting deductions which Louis has presented to us on phthisis and on typhoid fever.

In 1822, being in his forty-first year, Laënnec was appointed to the chair of medicine in the College of France, and in 1823 he was made full professor, succeeding Corvisart, his teacher.

During the last four years of his life Laënnec practiced only as a consulting physician. His income is rated at this time as follows: From the Faculté de Médecine, 10,000 francs; from the Collège de France, 5,000 frs.; from the Duchesse de Berri, 4,000 frs.; from his consultant practice, 25,000 frs.

All these honors, coupled with his hospital work and consultant practice, soon told on his health, and in 1826 he returned to the seaside, his former home, but the disease from which he had suffered for years had progressed too far to be arrested; his cough increased, he became feverish and much emaciated, and suffered greatly with dyspnœa. He died near Duamensey [Douarneny ?], France, August 13, 1826, in his forty-fifth year. He left a widow but no children.

Laënnec was rather small of frame, but of greater muscular power than his figure suggested. He was extremely fond of field sports, and prided himself on being an excellent mount. He was fond of competition and rivalry and took keen delight in attracting the students to his clinics. He gave lectures on pathological anatomy at the same time as the illustrious Dupuytren, and for three years pursued them with a noble spirit of rivalry between himself and Dupuytren, with considerable success. He was a man of the greatest probity and a sincere Christian; of manners mild and agreeable, with a conversation at once lively and instructive. His features indicated close study and a meditative temperament. He was remarkable for his great kindness and courtesy to foreigners; he was, though, a true son of Brittany, fond of his country, and, consequently, jealous for its honor. It is amusing to observe with what zest he retorts to a charge against his country as being infamous for an epidemic

itch; "If," says he, "the itch is sometimes found in my country, it is from the passage and sojourning of strangers now and then among the French."

The most remarkable features in the character of Laënnec as a practical physician were his profound acquaintance with organic diseases and his accurate diagnoses of them in the living body. His examinations were most extensive and minute. In the diagnoses of diseases of the chest "he was universally allowed to be without a rival." He was accustomed in the clinical hospital to dictate his reports and to address the pupils in Latin, partly from a wish to conceal from the patients his opinions of their complaints and partly from having always among his followers a good many foreigners who might, perhaps, be unacquainted with French.

To his widow the Government gave a pension of three thousand francs. There is today in Paris the Laënnec Hospital; and at Quimper, in the Place Saint Corentin, is a bronze statue of Laënnec.

References.

I have consulted and freely copied from the following articles, and wish to acknowledge my indebtedness to the authors:

"Auscultation Médiate." Par R. T. H. Laënnec. Paris, 1819.

"A Manual of Percussion and Auscultation;" arranged by Meriédec Laënnec, 1832.

"Lectures on Clinical Surgery;" by Baron Dupuytren, 1835.

"A Treatise on Diseases of the Chest and on Mediate Auscultation;" by R. T. H. Laënnec, M. D. Translated by John Forbes, M. D., 1838.

"Researches on Phthisis;" by P. C. A. Louis, M. D. Reprinted 1846.

"Lectures on Physic;" by Thomas Watson, M. D., 1853.

"R. T. H. Laënnec;" by Alfred Hudson, M. D., *Brit. M. J.*, Vol. II, 1879.

"Laënnec;" by W. S. Thayer, M. D., *Md. Med. Jour.*, 1902.

"A History of Science;" by Henry S. Williams, M. D., 1904.

"Counsels and Ideals;" by Wm. Osler, M. D., 1905.

"An Epitome of the History of Medicine;" by Roswell Park, M. D., 1906.

"Evolution of Internal Medicine;" by Wm. Osler, M. D., in Osler's Modern Medicine, Vol. I, 1907.

"Vienna after Thirty-four Years;" by Wm. Osler, M. D., J. A. Med. Assn., 1908.

"Epoch-making Contributions;" by C. N. B. Camac, M. D., 1909.

Dr. D. K. Shute had been especially impressed in reading the history of Laënnec by the intense antagonisms between leaders of culture in the olden days and by the chilly indifference with which some of the epoch-making discoveries were received by those most advanced in the sciences of the time. Vesalius was embittered by the opposition of Galen; Harvey denounced Malpighi; and so we find that Auenbrugger's exposition of the art of percussion was shrouded in obscurity until Corvisart had already practiced it for fifteen years and had handed it on to Laënnec; this art was regarded with chilly indifference by the general profession until, as developed by Corvisart and Laënnec, it enabled the former to supplant the famous Pinel in attendance upon the Emperor Napoleon, to whose practical mind the careful application of the method by Corvisart commended itself. Percussion then came into general use. It is agreeable to note that Corvisart took the method described by Auenbrugger and practically recreated it; he also, in translating Auenbrugger's work, added copious notes of his own; yet he gave Auenbrugger entire credit for the great discovery.

[**Dr. D. S. Lamb** demonstrated many varieties of the stethoscope, and gave the history of the development of the instrument. See *infra*.]

Dr. G. Wythe Cook said that it might be of interest to remark that as a teacher Laënnec was not fluent of speech. The great surgeon Dupuytren, who was a contemporary, drew many students by virtue of his eloquence in the lecture room or amphitheater; but Laënnec, recognizing his own limitations, by his careful preparation of his lectures and by his distinct utterance and interesting style, had no lack of students. The years of preparation of Laënnec were so employed that his student life may well be a model for the student of the present day.

Dr. J. C. Wise said that one feature of the formation of the scientific character of Laënnec needs emphasis. He was the clinician *par excellence* since the days of Hippocrates; and the secret of his clinical powers may be found in the fact that he carefully tabulated four hundred cases observed in his wards, and upon the accurate observation of these cases his later conclusions were based. Dr. DaCosta, in that magnificent address made before this Society last month, had made a remark to which Dr. Wise would take exception: he said that the great founder of the modern system of thought, Francis Bacon, had added nothing to the progress of medicine. Clear refutation of this idea might be had in the program tonight, both in the case presented by Dr. Vaughan and in the paper by Dr. Morgan. Valuable lessons can and ought to be learned from the accurate observation and report of a single case of acute pancreatitis; and Dr. Morgan had clearly shown that Laënnec was preëminently gifted in the power of deduction, but only after close and long-pondered

observation. Thus, Laënnec owed more to Francis Bacon, the master architect, than he did to his immediate teacher, Corvisart.

Dr. E. L. Morgan said that this great medical genius, Laënnec, lived in France during the Reign of Terror, and the outlook for a future brilliant career was not in his early youth very flattering. His father had sadly neglected this boy's education. In after years Laënnec by great perseverance filled up the gaps in his education, acquiring a knowledge of Latin and Greek, and could write well in both these ancient languages.

The essayist had not mentioned in his paper that among the papers written by the distinguished physician were two of historical importance: one, a thesis, which questioned the existence of Hippocrates (born 460 B. C.), and the other on the importance of Hippocrates to practical medicine.

Dr. Roy said that to him Auenbrugger seemed as wonderful as Laënnec. He worked out the principles and practical application of percussion in the examination of air-containing organs, and in his Inventum Novum presented to the world the only contribution on this subject since the days of Hippocrates, and this latter, indeed, has left on record only very crude ideas upon the subject. Auenbrugger observed and accurately described the notes to be elicited by percussion, and he correctly explained the correlation of quality, or tone of notes, and of pitch, to the physical structures of areas of the body from which the notes were elicited. To Dr. Roy it seemed that Corvisart had added little of value to Auenbrugger's work.

Dr. J. Dudley Morgan thanked the members for their interesting remarks. He was particularly glad that Dr. Wise had so well pointed out the correlation that must exist between observations both on the living and the dead; that is the only proper way to learn or to teach medicine.

The Stethoscope: a History.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

Stethoscopes may be classed in several ways. Those that are intended for use with but one ear, the monaural; those for use with both ears, the binaural or double; those for use by a number of persons at the same time, the polyaural. Some stethoscopes are rigid; all the earlier ones were; nearly all the later ones are flexible. Some of the earlier ones were made of rigid material but were jointed so that they could be bent.

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* Read before the Medical Society, April 27, 1910, as part of the discussion of the paper on Laënnec by Dr. Morgan.

Some stethoscopes have two pectoral tubes, for listening to two regions at the same time—for instance, both the upper and lower lobes of a lung; these are called bipectoral or differential.

Most stethoscopes have a central tube; a few have been made solid throughout.

The pectoral opening nearly always has a flare like a trumpet, and usually is firm and unyielding; sometimes, however, it is made of soft rubber so that it may better adapt itself to curved surfaces. For this purpose Dr. T. G. Snelling, of New York City,* devised a rubber rim in 1867, to be applied to any ordinary stethoscope, and it has been much used.

The aural end is usually made small enough to fit into the concha of the ear; in the rigid instrument, however, the earpiece is usually made broad and has to be held against the ear by the hand.

Most of the earlier rigid instruments were made of wood or light metal, and many are still so made, but hard or soft rubber has for many years been generally preferred. Some rigid instruments are made in two parts that telescope one into the other or are screwed to each other.

Laënnec is credited with having been the inventor of the stethoscope. It is altogether probable, however, that before his time some one or more persons did pretty much what he did except that no record of the act was made.

He experimented with various substances, and concluded that glass and metal are too heavy; they interfered with the transmission of sound and are cold to the skin. He tried goldbeater's skin, tubulated and filled with air, and its shape retained by means of a central tube of pasteboard. He considered that the best material is paper, reed and wood, because they are of medium density. He therefore made and used a wooden cylinder, preferably of cedar, a foot long and 1½ inches in diameter, with a central tube throughout three lines in diameter. He cut the cylinder in half to make it more portable; the two halves were screwed together. The pectoral end was hollowed out into a funnel shape 1½ inches deep.

This instrument was used to examine the respiration; but to examine the beat of the heart an obturator was inserted in the excavation at the pectoral end, and was held in place by means

* *Med. Record*, 1870–1, V, p. 44.

of a copper tube that traversed the obturator and penetrated to some depth in the main piece.

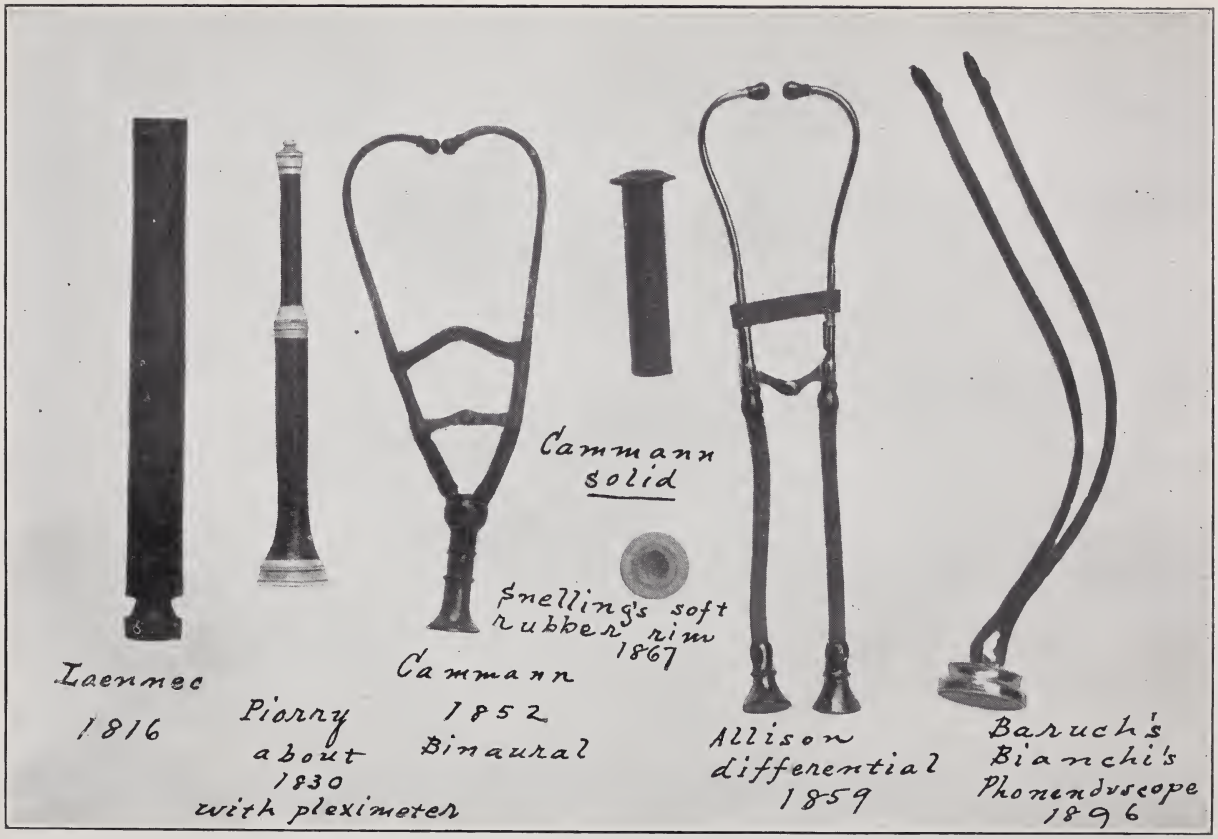
Already by 1823 the stethoscope had been used also for other purposes: to examine the abdomen in pregnancy, in cases of fracture, in ascites, in tympanites, etc.

In the second edition of his book, 1826, he described a modification of the instrument. It was of the same length and diameter as the original, but instead of the two halves being screwed together the pectoral half ended above in a tenon 1½ inch long, rounded off and covered with waxed thread or leather, and fitting into a corresponding mortice in the aural piece.

Laënnec was very particular about the dimensions of the instrument, and he also believed that the pectoral end should be slightly concave in order to adapt itself to the rounded shape of the body. He also made another instrument, of wood with thin walls, 1¼ inch in diameter, like a wooden cornet, with a hautbois pavilion three inches in width at bottom and one inch in the upper diameter; he excavated the pectoral end in different ways, especially in a funnel shape. He believed that it was better to have a tubular than a solid instrument.

In 1828 P. A. Piorry, of Paris,* made a stethoscope with a *pleximeter* attachment. He believed that the Laënnec instrument was too bulky, that the bulk interfered with the conduction of sound. He therefore reduced the instrument both in length and thickness, but preserved the conoidal cavity at the pectoral end, regarding it as quite necessary. He made the instrument of light wood, like Laënnec preferring cedar, believing that this conducted sound better than any other wood. His illustration shows an instrument 7⅓ inches long, diameter about half an inch in its upper two-thirds, and 1⅛ inch in the pectoral end. The aural end was made of ivory and had a screw thread on it for fastening an aural cap that he called an operculum, because when not in use it was attached to the pectoral end. When in use the cap was fixed at right angles to the long axis of the instrument. The figure of this instrument shows an excavation at the pectoral end, with a screw thread both at the central opening and the inner under margin. At this end, also, an ivory pleximeter was screwed, and over this was the operculum. An additional cylinder of the same dimensions as the body of the stethoscope was

* De la percussion médiate, Paris, 1828, p. 327, plate I.


Laennec
1816
Piorry
about
1830
with pleximeter
Cammann
1852
Binaural
Cammann
solid
Snelling's soft
rubber rim
1867
Allison
differential
1859
Baruch's
Bianchi's
Phonendoscope
1896

provided for use if desired, screwed to the main piece; also a conical obturator.

Delachambre* says that this instrument was adopted by the celebrated Louis and was the one most used up to at least the year 1883. The obturator was used in auscultation of the heart and great vessels.

Apparently the first FLEXIBLE tube of which we know was that of Nicholas P. Comins, an account of which was published in 1829.† He says that it was in use at the Royal Infirmary, Edinburgh. It consisted of two tubes, each seven inches long, $\frac{5}{8}$ inch diameter, except at the pectoral end, where the diameter of the opening was $1\frac{1}{2}$ inch. The two pieces were united by a perforated joint three inches long, placed at right angles to their ends, and fitting into the tubes in the same manner as the joints of a flute. This allowed the main limbs to form any required angle. The upper end of the instrument had a concave ear piece large enough to cover the ear, and by a movable joint could be placed in any necessary direction to the tube. All the joints were airtight.

The next mention of a flexible stethoscope seems to have been by a Dr. Stroud,‡ who began to use it about 1832. It consisted of rubber cloth lined with a spiral and elastic iron wire; the internal diameter was $\frac{1}{4}$ inch; it had a short, small aural end, of ebony, to insert into the ear; an ebony pectoral cup-shaped end; the entire instrument was 21 inches long. Stroud also devised a cardiscope, as he called it, which was a simple wooden stethoscope; and also a pleximeter.

In 1838 Dr. Francis Sibson, of Nottingham, England, began to use a flexible tube§ made by Thompson, an instrument maker of Nottingham; it consisted of two feet of ordinary elastic tubing, with a wooden, funnel-shaped pectoral end.

In 1840 Dr. Golding Bird, of London, described a stethoscope used by him,|| an ebony pectoral cup, one inch in diameter; flexible tube 16 to 20 inches long, of spiral iron wire, covered with silk or velvet, $\frac{1}{4}$ inch internal diameter; an ebony ball as ear piece on which was screwed an ivory plate two inches in diameter.

* Dict. Encyclop.

† *London Med. Gaz.*, 1829, IV, p. 427, figure; also, *Lancet*, London, 1828-9, II, p. 685.

‡ *Lond. Med. Gaz.*, 1841-2, I, p. 6, figure.

§ *London Med. Gaz.*, 1840-1, XXVIII, p. 911, figure.

|| *London Med. Gaz.*, 1840-1, XXVII, p. 442.

About 1843 Dr. C. J. B. Williams, of London, devised a BINAURAL stethoscope with a trumpet-shaped end; it consisted of two metal tubes attached to the pectoral part of an ordinary stethoscope, and there were flat ear pieces. It was, however, inflexible and awkward of application.

The two tubes of the binaural are usually let into a forked pectoral stem. Usually, also, they are made of metal in the aural part and of rubber in the part toward the forked stem; the rubber is usually silk covered. The tubes are held to each other in various ways; sometimes by a band of rubber or leather, by a metal joint, by a spiral spring, by a metal spring, etc. The forked stem may be of metal or hard rubber.

Comins, who in 1829 described a flexible stethoscope, also suggested a binaural, consisting of a tube connected at its middle at right angles to the cylinder that is applied to the chest and connected at its movable ends with two tubes movable on the same principle as for the two pectoral ends. It does not appear that the idea was practically applied. About 1851 a binaural devised by Dr. Arthur Leared, of London, was shown at the World's Fair, London, of that year. It had the chest piece, with two tubes and ear pieces.

In 1852 Dr. Geo. P. Cammann, of New York City,* devised an instrument consisting of a pectoral tube made of ebony, four inches long, with a trumpet-shaped opening at the chest end and globular piece at the other; into this piece were inserted two elastic aural tubes strengthened by wire. These tubes were each five inches long, and into them fitted two tubes of German silver seven inches long, each with an ivory-knob ear piece.

Many modifications of this instrument have been made. In some the metal and rubber tubes can be disjointed; in some others the metal tubes are held together by elastic ribbon, and in others by a hinged bar with a spiral spring.

There has been a great variety of binaural stethoscopes. A few only can be mentioned.

Dr. S. F. Speir, of Brooklyn, N. Y.,† devised a binaural with a chin rest, intended to intensify sounds produced by percussion. He called it an echoscope.

That by Mr. Irwin Palmer‡ has the tubes connected together

* *N. Y. Med. Times*, 1855, IV, p. 140, figure.
† *Med. Record*, N. Y., 1871–2, VI, p. 175, Fig. 4.
‡ *London Med. Record*, 1881, IX, p. 219, figure.

by a circular box-spring at the hinge; the dial plate attached to the hinge registered the divergence of the two metal arms, enabling diametric and other measurements to be made.

In the stethoscope of Dr. Chas. Denison, of Denver,* the tubes diminish in diameter toward the ear piece.

In that of Belcham-Keyes the tubes have an unusually large diameter, though gradually diminishing towards the ear piece; the metal plate connecting the rubber tubes has a toggle joint like that of the Bartlett instrument.

Dr. D. M. Cammann, of New York City,† modified the cup of Paul by placing it around the stethoscope tube instead of being separate from it. Cammann claimed that the bulb acted as a resonator, and stated that the idea of exhausting the air was suggested to him several years before by Dr. J. R. Leaming, of New York City.

Herschel, of London,‡ described and figured an instrument in which he substituted a clamp for the spring and loop, to hold the tubes together.

Dr. Mark I. Knapp, of New York City,§ devised a stethoscope in which the tubes were made of German silver covered with hard rubber, with an intervening tube made of German-silver wire covered with vulcanized rubber, or of soft rubber covered with silk or wool. A continuous equal caliber. Five years later|| he devised one in which the pectoral piece had a greater flare; and beyond the pectoral piece both tubes were of wired rubber tubing; the ear tips had soft rubber covers; the spring wire was to give firmness and spring.

Dr. S. A Knopf, of New York City, devised two forms. One has wired rubber tubes, ear plates and tips, a steel head spring to hold the instrument against the ears; there is an oval chest piece for intercostal auscultation; a steel delineator or localizer, and a pleximeter and Flint percussion hammer.¶ This instrument was afterwards modified; the ear tips were discarded. The chest pieces were made of metal covered with vulcanized rubber. It also had a modification of Paul's suction cup.**

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* *Med. Record*, N. Y., XXVII, 1885, p. 391, figure.

† *N. Y. Med. Jour.*, 1885, XLI, p. 27, figure.

‡ *Lancet*, 1891, I, p. 609.

§ *Med. Record*, 1895, XLVIII, p. 682, figure.

|| *Med. Record*, 1900, LVIII, p. 119, figure.

¶ *Med. Record*, N. Y., 1897, LI, p. 646, figure.

** *N. Y. Med. Monats.*, 1898, X, p. 79, figure; *Jour. Amer. Med. Assn.*, 1898, XXX, p. 27, figure.

Constantine Paul, of Paris, France,* devised a transfusion apparatus, part of which consisted of a round cupping glass ; and he afterwards applied the idea to the stethoscope in order to make the instrument adhere to the skin of the patient examined, the air being exhausted by the rubber bulb.† A rim of soft rubber was afterwards added to the chest piece, so that the instrument could be more closely applied.†

In some instruments the chest piece is quite short, as in that of E. T. A. Smith.|| The stethoscope of Pickering, called "Panarkes," could be used as monaural, binaural and differential.§ It also had a percussor, hammer and pleximeter.

That of J. W. Cousins¶ could be used as monaural or binaural.

In 1859 Dr. S. S. Allison, of London,** devised a stethoscope with two aural and also two pectoral tubes, therefore a DIFFERENTIAL stethoscope ; practically two single stethoscopes joined together.

R. D. Lyon†† devised a differential stethoscope of hard rubber, with a single stem and ear pieces.

W. H. Spencer‡‡ devised a flexible instrument with two ear pieces and two chest pieces.

In 1903 H. E. Wetherill, of Philadelphia,|||| described a differential of his own devising.

Paul§§ says that Marsh, of Cincinnati, invented two instruments ; one was a flexible rubber stethoscope with a hemispherical obturator. The other was a guttapercha stethoscope, the aural plate of which was replaced by a "spout" having two rubber tubes perpendicular to the main tube ; the pectoral piece could be replaced by another obturator having two rubber tubes, at the free end of each of which was a small pavilion. This was then a differential stethoscope, and was used by Marsh in his studies of Doctor Groux, who had the bifid sternum.

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* Maladies du Cœur, Paris, 1883, p. 56, Figs. 9 and 10.

† See also *Bull. Acad. Med.*, Paris, 1881, X, p. 552.

‡ *Dict. Encyclop. des Scien. Med.*, Paris, 1883, XII, p. 68; Cammann, *Trans. Amer. Climat. Assn.*, May, 1885, p. 171; *N. Y. Med. Jour.*, 1886, XLIII, p. 405; etc.

|| *Brit. Med. Jour.*, 1884, I, p. 909.

§ *Brit. Med. Jour.*, 1887, II, p. 1342.

¶ *Brit. Med. Jour.*

** Read before the Royal Society, Feb. 18, 1859; published in his "Physical Examination of the Chest," London, 1861, pp. 325, 406.

†† *Dublin Quart. Jour. Med. and Surg.*, 1862, XXXIII, p. 364, figure.

‡‡ *Brit. Med. Jour.*, 1874, I, p. 409, figure.

|||| *Amer. Jour. Med. Sci.*, 1903, CXXVI, p. 884.

§§ Maladies du Cœur, Paris, 1883, p. 47.

The PHONENDOSCOPE.—Apparently the beginning of the phonendoscope was in a binaural stethoscope devised by Dr. N. B. Marsh, of Cincinnati, in 1851. It was patented by him. Over the pectoral end of the instrument was stretched a membrane; two elastic tubes led from this to the ear. It is said that the ear pieces were inconvenient, and to use the instrument required both hands. It gave a muffled but loud sound caused by reverberation inside the instrument, due to the presence of the drum and the unequal diameter of the bore.

About 1869 Stern, of Vienna,* devised what he called a portable stethoscope; it consisted of a hollow conical tube, at the larger end of which was stretched a membranous diaphragm; the ear tubes opened separately into the hollow tube.

Yeates, of Dublin, about 1876† devised a hollow metal sphere with two rubber heads; this drum could be inflated through an opening guarded by a stopcock. There were two aural tubes, and several could be used.

Koenig‡ devised an instrument with a pavilion pectoral end and a rubber tube with ivory earpiece. The pectoral end had two rubber membranes forming a drum, with a stopcock by which the drum could be distended with air so that it would fit the surface of the body.

Sometime before 1892 a Dr. Fischer devised a flat ring with metal proximal and membranous distal covering and ear tubes.

The phonendoscope as it later appeared consisted of a heavy metallic cup with low margins, in which a light elastic hard-rubber diaphragm was made to vibrate both by sound waves and body movements. The instrument was made somewhat on the principle of the telephone. Two rubber disks may be used, and in some instruments to the middle of the outer disk is attached a rod ending in a small hard-rubber disk-shaped head. Two long rubber tubes with earpieces connect with the cavity of the instrument. It was devised by Aurelio Bianchi, of Florence, Italy, in 1894,§ and Eugenio Bazzi.¶

Bianchi's instrument was modified by Dr. H. B. Baruch, of

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* *Wien Med. Presse*, 1869, X, pp. 778 and 802.

† *Med. Press and Circular*, Dublin, 1876, XXII, p. 58, figure.

‡ Dict. Encyclop. des. Sci. Med., Paris, 1883, XII, p. 73, Figure 2.

§ *Policlinico Roma*, 1894, I.

¶ *Clinica Moderna*, Florence, 1895, I, p. 421, figure.

New York City, in 1896. The distal ends of the rubber tubes were attached to the ear pieces of an ordinary stethoscope.*

The phonendoscope claims some advantages over the stethoscope; the examination is quicker and more reliable, it can be used over clothing, and other sounds are excluded.

Dr. W. B. Outten, of St. Louis, Mo., patented, June 26, 1900, an instrument which contained several membranes, the principle the same; he called it an auscultator. Kohler's phonendoscope has only one rubber disk. Dr. R. C. M. Bowles, of Brookline, Mass., patented one June 25, 1901, the ear tubes of which were united at the place of insertion into a disk.

In 1841 H. Landouzy, of Paris,† had a POLYAURAL stethoscope made of wooden tubes articulated, forty-eight inches long, and with many movable joints, so that it could be bent in many different directions, according to the positions of the patient and physicians, and with ten flexible appendages, so that as many persons could hear the sounds. He called it a stethopolygraph, or simply a polyscope. Andry‡ states that this polyscope was made of copper or tin, with a central tube; was 1⅛ inch in diameter, and was covered with thin tissue. Delachambre and Petit state§ that Landouzy made a wooden stethoscope with ten curved tubes. Because it was *too rigid* it was abandoned and a flexible one was made that was found practicable.

There have been but few stethoscopes altogether solid, that is, without any central tube. Cammann, who invented the binaural, also devised a short, solid instrument in two forms. The literature contains much discussion of the question as to which form is best, solid or hollow. Inasmuch as some solids and some liquids have been shown to transmit sound better than air it will be understood that there is something to be said in favor of the solid stethoscope.

Mention may be made again of stethoscopes with *percussion* attachments. That of Piorry has been already described. There have been others. That of Martin, which is at least thirty years old, consisted of a tube 6½ inches long, with funnel-shaped aural and pectoral ends; in the latter was an obturator; there was also

* *Med. Record*, N. Y., 1896, L, p. 624, Figs. 1 to 3.

† "Mémoire de l'Auscultation," Reims, Paris and London, 1841, p. 25.

‡ "De Percussion," etc., Paris, 1844, p. 120.

§ Dict. Encyclop. des. Sci. Med., Paris, 1883, 3d series, XII, p. 68.

a percussor, with a long stem extending through the obturator and tube, but readily removed; and a pleximeter with raised ends. The general plan may be said to be that of Piorry. All was made of hard rubber except the percussor.

The question of what is the best form of stethoscope is certainly of importance. For the examination of organs that differ in their characters of density and hollowness, and of gaseous or liquid contents and in other respects, and because different persons vary in their ability to recognize the qualities of sounds, it would seem to be altogether probable that the instrument would need to be different in different cases. Doubtless the question could be settled for any one individual by his trying several forms of stethoscope.

BONE GRAFTING AND OSTEOPLASTY. A CASE OF THE LATTER PRESENTED.*

By E. P. MAGRUDER, A. M., M. D.,

Washington, D. C.

Bone grafting may be defined as the art of transplanting living bone from the same individual, from a different individual or from an animal to another bone or periosteum, for the purpose of repair or restoration of function.

Other materials, such as bone chips, calcined bone, decalcified bone, bone ferrules, bone plate, dead bone or living bone, when deprived of its periosteum and endosteum are not properly termed bone grafts. They serve merely as arbors or trellises over which the real bone may grow in the process of repair, or otherwise act as irritants to provoke the osteoplastic process.

Does the living graft remain as such and grow, or does it excite new bone formation and disappear forever from the stage of activity? The question is undecided. That the center of the graft dies while the periphery becomes fused with the living bone and continues its identity is the opinion of some. As a general proposition, such a conclusion is not justified by the facts. In

* Read before the Medical Society, March 30, 1910.

some cases it is doubtless true that the periphery survives at the expense of the center; in others both periphery and center survive; while in others still, neither survives as such, having served co-equally only in the formation of fibrous tissue—often of the greatest service.

The subject of bone grafting has been touched upon in different terms to express much the same purpose, since, aside from bone grafting, we read of bone implantation, of bone transplantation and of bone regeneration. The button of bone returned to its site after a simple craniotomy or trephining is regarded as a bone implantation. Pirogoff's osteoplastic amputation is designedly a bone transplantation.

Calcined bone, an approximate physiological substitute for bone, since it supplies the lime salts, readily fills cavities until it is replaced by bone, which grows over and through its interstices like the vine upon the arbor. Such a method illustrates artificial bone repair or regeneration. Because of the strength of the resultant bone tissue calcined bone is, perhaps, better than decalcified bone.

In the compound or comminuted fracture with considerable loss of fragments, in mal-union following loss of bone, in long bones with considerable loss of continuity of the shaft, in dislocations and fracture-dislocations, in gun-shot wounds with shattering of the bone, in deformities and osteomyelitis, in ankylosis and pseudo-arthrosis, and especially as a substitute for amputation, bone grafting finds its chief utility.

Bone grafts are of numerous kinds, as witness (1) the animal bone attached to recipient while adherent by periosteum, soft structures and vascular supply to an adjacent part of the donor's body; (2) a portion of human bone attached by periosteum, soft structures and vascular supply to an adjacent portion of the donor's body, as in facial fractures and deformities; (3) a detached live bone of an animal donor implanted into defect of human recipient; (4) a detached live bone of the human donor, his own or that of another, implanted into defect of the recipient.

In a long bone the center of which has been destroyed but whose periosteal tube is intact, one can, by means of the osteotome or chisel, chip off pieces from the ends of the broken bone, pack them in the periosteal tube connecting the proximal and distal fragments, and with reasonable confidence look forward to

bony union of the shaft. Even in the absence of the periosteal tube the case is not hopeless, for an artificial tube can be made of the soft parts, filled in with bone chips and held in position by chromic catgut sutures.

Some prefer human, some animal grafts; both are successful. The great availability of bone grafts from the lower animal to man and their successful application warrant the assumption that this field of usefulness will shortly be greatly augmented.

Opportunity presenting, the osteoplastic offers the best as well as the safest bone graft.

To Philip Francis von Walther, in 1813, is due the distinction of having been the great pioneer in osteoplastic surgery. He has had many disciples since his day, most distinguished among whom may be mentioned Ollier, Pirogoff, Sabanejeff, Gritti and Bier.

In the osteoplastic bone graft the freshened surfaces of bone are variously held in contact—the bone surfaces may be held in apposition, when there is no strong counterpull, by simply suturing the surrounding soft parts together; the periosteal edges may be sutured together, or the surfaces otherwise held by screws, wires, pegs or nails.

In the long bones the osteoplastic operation admits of closure and protection of the medullary canal, secures a solid end of bone to meet pressure, avoids adhesions between sawed bone and soft coverings, and by retaining mobility of the parts lessens the dangers of neuralgia and stump ulceration.

Having touched upon bone grafting and osteoplasty in general, let us for a moment glance at a case of the latter in particular:

H. M., male, age 22, single, laborer. Previous history negative.

Present history: He was brought to the Emergency Hospital November 14, 1909, having just sustained a gunshot wound of right leg at the lower end of the middle third. The firearm was a 16-gauge shotgun, choked bore, carrying 3 drams powder, 1½ ounces of No. 6 shot, held and accidentally discharged by its owner, standing close by patient's right side. The line of shot was oblique, from right to left, directed downward and inward.

Examination showed a ragged, perforating wound, 1½ inch wide, 2 inches long; destroyed musculature; posterior tibial and peroneal arteries were severed; 4 inches of fibula shattered and

completely destroyed; tibia and anterior tibial artery were intact. Immediate operation consisted of removal of blood clot and bony fragments; curettage of soft parts for all obtainable shot and destroyed tissue; bichloride, followed by normal salt solution, irrigation; drainage tubes; one-half of 1 per cent. carbolic-acid wet dressing; the administration of 1,500 units of antitetanic serum; local warmth and rectal installation of normal salt solution to maintain vigor of circulation. From the first saving the limb looked hopeless, but the patient declined amputation, and here was an attempt to observe his wishes.

On the evening of the 17th gangrene present; amputation was urged, the patient being plainly told that the responsibility would rest altogether upon himself otherwise. With temperature 104, pulse 140 and respiration 44, on the morning of the 18th he consented to amputation, when a disarticulation was done at the knee, the long, broad-curved anterior and short-curved posterior flaps being used; patella retained. On the 19th temperature, pulse, respiration, registered 99.6, 88 and 20, respectively.

On December 10th, however, a portion of the flap sloughed, the result of the gangrenous process, exposing the joint, which likewise showed an initial necrosis. Additional amputation being necessary, this, with an osteoplastic grafting of patella, was decided upon, and performed December 11th.

The technique of the operation was as follows: Edges of old skin flaps trimmed to healthy tissue and skin dissected circularly, the cuff turned back above the saw line; soft structures dissected free from the bone 3½ inches above the articulation where the dimensions of the femur are at one with those of the patella; femur amputated; posterior soft structures carefully trimmed with scissors into a broad concavity for reception of the anterior, broadly-curved convexity of ligamentum patellae and capsule; patella turned back upon thigh, articular surface upward, and held firmly in a piece of muslin by assistant while it was sawed in half horizontally; it was then turned upon itself, brought down and fitted into exact position upon the end of femur held immovably by assistant; at opposite sides of the bone near its periphery the periosteal elevator was used to peel to either side the fibro-periosteum for access to the bone with a counter-sink the size of the screw-head used; with counter-sink of the selected size a depression was made into which the bone drill was fitted,

the diameter of bone drill being a trifle smaller than that of the screws employed; holes were then drilled through patella and into the dense bone of the femoral ring to a depth nearly corresponding to the length of the screws; following the bone drill came the bone threader, the thread of which corresponded to those of the screw; one-inch iron screws were then driven home by means of a screw driver, the heads of the screws lying a trifle below the external surface of the bone; the fibro-periosteum was then returned to position, sutured over the heads of the buried screws with double 00 chromic catgut; chromic catgut No. 2 was then used for suturing the inferior concavity of soft parts to the superior convexity, consisting of fibro-periosteal capsule and ligamentum patellae; the skin flaps were then brought over all, sutured with interrupted silk-worm gut, reinforced by plain No. 1 catgut, and rubber drainage tubes placed, one passing through all structures to the saw line, the other just beneath the skin, and left in position for two days out of abundant precaution.

The patient has made an uneventful recovery. The graft is firmly united. After three months he is able to stand his entire weight upon the stump without pain.

It may be well to recall that Gritti divided the femoral condyles at the level of the adductor magnus tubercle, applied the sawed patella to the sawed femur and covered the stump with a long, rectangular anterior flap. Stokes' modification advances Gritti's femoral saw line three-quarters of an inch above the tubercle. In neither is bone sutured to bone, while the operation herewith presented carries the saw line 3½ inches above the articulation to a point where the transverse section of femur corresponds to the size of the split patella, permitting of the most exact coaptation. The higher amputation not only approximates bone sections of similar size but prevents dangerous tension as well, while still affording ample leverage. The bones are fixed with screws, removable at will and within five minutes, if desirable. The stump is useful, its end is not irritable. The scar is removed from pressure and designed for present-day prosthetic apparatus. Better than transverse section, uncovered though smooth, it has no corners or osteophytic outgrowths to make pressure upon a sensitive scar. And instead of the bone end being very sensitive it is insensitive and extremely serviceable. The scar is subject neither to pressure nor to traction, with a re-

sultant minimum of disturbance. The result is a reproduction of the *status ante quo*, for the anterior surface of the patella—a natural pressure-bearer—is preserved, together with the bursa between the skin and itself, leaving the latter undisturbed. One's weight can be as steadily borne as when one ordinarily kneels; its length is sufficient to permit leverage within the socket of a most serviceable artificial limb, upon which the patient can walk as if upon his own leg.

This suggests a thought upon the subject of amputations, for, next to the saving of life, the chief object of amputation is a useful stump. What, then, are the requisites of a useful stump? Ample covering, musculo-periosteal if possible, firmness in consistency, insensitiveness, minimum sacrifice of healthy tissue, small wound area, good blood supply, favorably-placed cicatrix, efficient drainage, absence of tension of soft parts over bone, adjustability of artificial limb, largest range of adaptability, regularity and symmetry in contour.

Judged by these standards, the author submits that the method here adopted has this in its favor: that from the ashes of this or that quibble in technique arises the great question of service to humanity, and before us would appear to be a stump not only painless upon pressure but one of every-day, practical usefulness as well.

Dr. J. Ford Thompson said that the patient exhibited by Dr. Magruder demonstrated that the operation had been very successful. It did not seem to Dr. Thompson, however, that the case presented anything new; success was to have been expected; the case was in a class in which the results are nearly always good. While in the West recently he had seen a rather remarkable case of bone grafting that displayed great ingenuity on the part of the operator; in Omaha he had seen a Dr. Allison operate on a girl of 12 years who had a congenital deformity of the lower maxilla, the body of the bone being represented by little more than the alveolar process. The deformity was most disfiguring and the mother of the child was desperate in her search for some remedy; on this account Dr. Allison undertook the operation. An incision was made along the inferior border of the bone, the scant amount of periosteum was elevated and turned back, and a shaped portion of the thigh bone of a freshly-killed chicken was put in place to represent the body of the maxilla and covered as well as possible with periosteum. A communication from Dr. Allison had informed Dr. Thompson that the bone

had lived and that a fair success had been achieved; although a second piece of bone had been grafted later, this had also lived and a fair cosmetic result effected.

Bone grafting is a very different thing from osteoplastic work; there is almost no limit to the possibilities of osteoplastic work, but no man can be assured that a piece of bone from another man or animal will live, and the results will always be dubious; suppuration is most apt to occur and may end fatally to the patient.

Dr. Carr congratulated Dr. Magruder on the successful termination of the case, and called attention to the fact that, contrary to a statement in the paper, the patella is not insensitive but is very painful on pressure. It does, however, make a nicely rounded end to an amputated thigh bone and makes an immediately good looking result; the sawn bone would, however, round off itself just as well. The best end to leave is the articular end of the bone where this is possible; if it has to be cut off the patella is often handy to fix on the cut end. A little nail is all that is necessary to hold it in place. True grafting is the transfer of bone from one part of the body to another or from one individual to another. In Dr. Carr's opinion such bone never lives; it merely acts as a framework for laying down fresh bone tissue. For this purpose calcined bone is best; it may readily be made aseptic, is easily shaped, and primary union is usual after its use.

Dr. Magruder had not expected to present anything new or original in presenting the case. His intention was to use the articular end of the femur for the stump extremity, but it was found to be necrotic and had to be removed. The general opinion of European surgeons seems to be that it is better to leave the ends of sawn bones bare than to cover them with stripped periosteum, but that it is best of all to cover sawn bones with other bone which retains its own periosteum; this he had done. He thanked the speakers for their participation in the debate.

SCENE: A sick room; Master Johnny, a five-year-old, propped up on pillows; Mamma and the doctor in the foreground.

Mamma (interlocutor): "Now, Johnny, darling, here's some castor oil for you, fixed up with nice wine and sugar."

Doctor (beseechingly): "Remember, mamma, don't let Johnny have it all; keep some for me."

Johnny (knowingly): "Mamma, doctor's such a dear good man, let him drink the whole of it, won't you?"

THE SURGICAL TREATMENT OF RETRODISPLACEMENT OF THE UTERUS; WITH SPECIAL REFERENCE TO THE BALDY-WEBSTER METHOD OF SHORTENING THE ROUND LIGAMENTS.*

By HENRY D. FRY, M. D., Sc. D.,

Washington, D. C.

I direct your attention to the consideration of the surgical treatment of retrodisplacement of the uterus. The subject is practical because it is one of the most common complications brought to our attention for relief by modern surgical art, and it should elicit a free discussion from any assemblage of medical men interested in the ills of suffering woman, because of the widely divergent views entertained by the profession regarding the best surgical procedures to effect a cure. Indeed, one class of gynecologists believes that retrodisplacements cause no trouble, and consequently no treatment whatever is necessary; others take the position that symptoms come only from complications, and these must be treated; a third class regards the malposition as a primary cause of suffering, and directs attention to means of correcting displacement.

The gynecologists who take the position that retrodisplacements cause no trouble base their opinions largely upon the ground that women are met with who are apparently well, and yet physical examination accidentally reveals a backward displacement of the uterus. As well might one argue that the battlefield is a safe environment because so many soldiers go safely through a campaign.

The gynecologists belonging to the second classification attribute the symptoms: backache, leucorrhea, menorrhagia and metrorrhagia, dysmenorrhea, sterility, nervous reflexes, etc., to engorgement of the uterine and pelvic blood vessels, and institute appropriate treatment to relieve that condition.

Conservative and medical gynecologists limit these efforts to give relief to employing scarification, hot douches, the application of iodine or ichthyol, glycerine and boro-glycerine tampons; possibly curettage and the adjustment of a pessary.

* Read before the Medical Society, April 13, 1910.

The third class of gynecologists mentioned will attribute the complications, as well as the resulting symptoms, primarily to the faulty position of the womb, and consequently will recognize the importance of correcting the displacement.

Recent years have witnessed a more and more limited field of usefulness for pessaries. They are still of value in some special cases for correcting retrodisplacements unaccompanied by intraperitoneal complications. Mechanically they accomplish the purpose for which they are employed as long as they are worn, but a cure of uncomplicated chronic displacement can be anticipated in only about 5 or 10 per cent. of the cases so treated. Intraperitoneal complications co-exist in a large proportion of the cases of retrodisplacement of the uterus. They are prolapsus of one or both ovaries ; inflammatory diseases of one or both tubes and ovaries ; subinvolution and fibromyoma of the uterus ; and adhesions of the tubes, ovaries or uterus to adjacent parts. These complications are usually the main source of ill health and cannot be overcome by the more conservative methods of treatment mentioned. The extra-abdominal shortening of the round ligaments is equally inadvisable unless preceded by celiotomy and appropriate treatment of the co-existing complication or complitions. If celiotomy be indicated this brings us to the consideration of the important question, What is the best surgical procedure for the cure of retrodisplacement of the uterus? No one method can be accepted as the ideal one for all cases, but if the conditions be favorable for its performance, every operator has his favorite method and will choose that one. It is impossible to mention here the many methods and modifications devised by different operators. The personal equation enters so largely into consideration that I will give my own experience and the reasons that have led me finally to adopt as my favorite surgical procedure for the cure of retrodisplacement of the uterus the Baldy-Webster method of shortening the round ligaments.

For a number of years I preferred ventral suspension of the uterus. It gave satisfactory results, holding the organ in position, and I know of only one or two recurrences of the malposition afterwards. If there were any other failures the cases passed out of my observation and fell into the hands of other gynecologists ; but none such have been reported to me. I have met with two recurrences of the displacement after operations performed

by good gynecologists. I have had in the neighborhood of thirty pregnancies and labors following the operation without any complication. I had occasion once to perform Caesarean section for ventral fixation that inadvertently resulted from a suspension operation. The case had been operated upon by a prominent gynecologist, and infection of the wound caused firm attachment of the uterus to the abdominal walls.

Hysterorrhaphy has been a very popular operation in the past and is still employed very frequently, but a strong condemnation of the operation within recent years has led many operators, myself included, to look for some substitute. Baltimore is the cradle in this country of the ventral suspension operation. Although introduced by Dr. Kelly and his followers it is practically abandoned by them at the present time. Dr. Williams reported five cases of obstructed labor after the operation. Fixation of the uterus had followed unintentionally the suspension in these cases, and the technique of the operation could not be questioned or held responsible for that result. Recurrences of the malpositions and intestinal obstruction by the suspension ligament added to the growing disfavor against hysterorrhaphy. The various objections urged against the operation have not held good in my experience, but I began some years ago to give up the use of nonabsorbable suture material within the abdominal cavity. The emancipation was complete except for this one operation in which I still employed silk to suspend the uterus. A few years ago I had the annoyance to treat a sinus which was due to the infected silk sutures, and then it was I determined to swim with the current and join the increasing number of operators who had abandoned ventral suspension as the elective operation for retrodisplacement of the uterus.

About four years ago I did several operations which were similar to that since perfected by Baldy. In the first one I drew the round ligaments over the top of the tubes and fastened them to the posterior surface of the body of the uterus. Recognizing the faulty technique of such a procedure, which depressed the tubes unnaturally, I then punctured the broad ligaments and drew the tubes through and fastened them to the back of the uterus. Instead of continuing to work along this line, which has since been so satisfactory, I switched off to the Gilliam operation. Good results were secured also by this method, the

performance of which was particularly satisfactory when done with the Pfannensteil incision. I should probably have continued to give this operation my first choice had not Baldy directed my attention to the advantages derived from the method he had perfected. We so often find prolapsus of one or both ovaries complicating the displacements of the uterus, and no other operation with which I am familiar answers so well to cure the malposition and at the same time accomplishes the result of lifting and holding up the appendages. I have followed my cases as well as possible after operation, and the end results have been most gratifying. I have not had the opportunity to watch the test of pregnancy and labor occurring after this operation, but Baldy says that in some twenty or thirty cases of the kind no trouble resulted.

In some instances I have found the Pfannenstiel incision advantageous and often employ it in clean cases. It gives a good exposure of the pelvic viscera and, being in the nature of a gridiron operation, it leaves a strong abdominal wall, with no danger of hernia. It has its claims for esthetic reasons. The scar is in the line of the natural wrinkle of the abdominal wall, and the subsequent growth of suprapubic hair conceals it from view. For puncturing the broad ligament I employ a Halstead hemostat, or one having a pointed end. In a personal letter from Baldy he requests that I particularly mention the point at which the round ligaments are brought through the broad ligaments, viz: under the ovarian ligaments and moderately close to the uterus.

At the meeting of the American Medical Association, held in Atlantic City last June, some objection to the Baldy operation was made, on the ground that the portion of the round ligament attached to the uterus atrophied and failed to hold the organ in position subsequently. Such criticism would apply only to faulty technique. The thickness of the ligament must not be included in the suture that fastens it to the uterus. Baldy removed the uterus one year after he had performed the operation, and found the ligament intact and blended with the organ. The uterus had been maintained in good position in the meantime.

Dr. I. S. Stone said that he had enjoyed the paper, in which very much had been said in a very few minutes. He recollected the meeting at Atlantic City referred to in the paper, and had been among those who had taken exception to the operation de-

scribed. At that time he had taken occasion to speak of some etiological factors of retrodisplacements. There is a general idea that the uterus becomes congested and weighty and assumes a retroposition because the suspensory ligaments are not strong enough to hold it up; his belief is that retrodisplacement of the uterus is only one item in a general descensus of the abdominal viscera due to a connective-tissue disease, in which, among others, the uterine ligaments become relaxed and elongated. Every case must be considered by itself in the determination of the proper procedure for relief. A number of operative measures suggest themselves in women of child-bearing age: shall the Alexander-Adams operation, by which the external end of the round ligament is taken up and fixed, be done, or the Baldy-Webster operation with shortening and fixation of the internal end? Or may the Mann operation, which took up the slack in the middle of the ligament, be considered, in view of the many failures in end results? One end of the round ligament is stouter than the other, and it seemed reasonable to Dr. Stone to take up the slack at the weakest portion; it did not seem to him good judgment to take up and fix the stoutest portion of the ligament, as in the Baldy-Webster operation; this leaves the external weak end as weak as before, with the same load to support. He prefers to dissect out the distal, slender extremity of the round ligaments, pull the ligaments out through the external inguinal ring, and carry the slack portion across the median line and suture it to the edge of Poupart's ligament; this is the Francis-Martin operation. By this procedure the round ligament is drawn out to the beginning of the strong portion, and about five inches of ligament with raw surfaces are carried across under the skin and held to Poupart's ligament with a single suture, which will hold the structures in place long enough to insure firm adhesion. It must be admitted that the Baldy-Webster operation had its origin from the failure of the Alexander method in a certain number of cases.

Dr. J. Taber Johnson said that he was hardly competent to discuss the operation described by Dr. Fry because he does not perform it. He belongs to the second class of gynecologists as grouped by Dr. Fry, those who believe that the pathologic condition of the womb itself is as much a cause of the symptoms as the retrodisplacement. We should take into consideration all the concurrent conditions, the weight and congestion of the uterus as well as the relaxation of the uterine supports; and all these causes should have treatment directed toward their removal without adhering to any operation which merely holds up a sick uterus. He had opposed Alexander's operation on account of its limited field; certain enthusiasts would do it in cases where it would be impossible to elevate the uterus by the method on account of adhesions or inflammatory conditions. Pathological, anatomical and surgical knowledge must all meet in rendering a

decision in each case as to the proper course to be pursued. The suspensory ligaments of the uterus are all capable of great hypertrophy and lengthening, and experience shows that after operations for the purpose of shortening them, still further stretching may take place. He had been of that class of men who hold to an operation that will allow of correction of all allied conditions as well as the retrodisplacement, viz: ventro-suspension. The few difficulties encountered after this operation are not sufficient to condemn it. Statistics show that only 1 in 40 women, after ventro-suspension, has any difficulty in parturition, but that proportion of unoperated women also has difficulty in labor. The artificial suspensory ligament produced by the operation may possibly cause strangulation of the bowel, but if all operations after which this accident may occur are to be abandoned, then all operations within the abdomen will cease. Ventral suspension is simple, requires little manipulation to perform it, and as the age and experience of the operator increase, his tendency should be toward the choice of the simpler procedures available to relieve the patients. The operation of ventral fixation was, of course, to be unreservedly condemned, except for relief of procidentia in old women.

Dr. Bovée agreed with the remarks of Dr. Stone that retroversion is often only one feature of a general condition, and that the surgeon must avail himself of such procedures as seem most likely to relieve the whole situation. Dr. Bovée objected to the Baldy-Webster operation that the ligaments are attached too low on the back of the uterus; the operation is best done if so modified that the ligaments are attached to the back of the uterus on the same level as the normal attachments in front. In practice it is often impossible to get the two ligaments to come together behind the uterus, and this feature may be neglected. He called attention to the part the utero-sacral and utero-vesical ligaments play in the etiology of retrodisplacements. Many years ago it was pointed out that if the diaphragm made up of these ligaments through which the cervix uteri thrusts downward and backward is so altered by laceration or otherwise as to allow the cervix to swing forward out of the hollow of the sacrum, retrodisplacements will occur; therefore, in some cases operative procedures directed entirely to the other end of the uterus will be ineffectual, and cure will be attained only by altering the levels of attachment of the utero-sacral or utero-vesical ligaments to secure the proper leverage to keep the cervix in the hollow of the sacrum. He needs to be convinced as to the practical importance of the varying strengths of the two ends of the round ligaments. He had been performing the Baldy-Webster operation for a number of years (subject to the modifications already noted), and he regards it as the best operation available for uncomplicated cases. He wished to pay his respects to the opera-

tion of ventro-suspension. One of the speakers, Dr. Johnson, had said that the artificial suspensory ligament effectually and easily held up the sagging uterus; Dr. Bovée has on several occasions found it necessary to remove the uterus from women whose lives had been made miserable by the constant nagging pull of the suspensory ligament upon the abdominal wall. He referred to a recent report by Williams, of Johns Hopkins, of five cases of pregnancy in women upon whom ventro-suspension had been done in Kelly's clinic; Williams had found it necessary to do Cæsarean section in four of these cases, and another operation of a serious nature was necessary in the fifth. Dr. Bovée challenged the ability of any man to predict absolutely whether suspension or fixation would be the result of the operation designed to secure suspension. The danger of intestinal adhesions after ventral suspension is a very real one, and the case may be fatal; many such cases have been reported. The operation, in his opinion, ought to be abandoned.

Dr. A. B. Hooe said that if a man of somewhat limited experience might dare to differ with those who had already spoken he would say that none of the four operations advocated by them is the best. To speak of other matters first, however, he believed that retrodisplacements are not so frequent as had been taught when he was a student; his recollection was that scarcely a gynecologic clinic terminated without a retroversion operation. Prophylaxis is a most important item, and preventive treatment of retrodisplacement might well begin by avoiding the present-day mistake of keeping puerperal women too long on their backs. Indiscriminate dilatation and curettage should be avoided; these operations are done much more often than actual conditions require. As for the operative measures for the cure of retrodisplacements the old Schultze method has deservedly fallen into disrepute because it may actually do much harm; the original Alexander operation is unreliable, as the attitude of the profession to it very clearly shows; alteration of level of attachment of the utero-sacral and utero-vesical ligaments may be effective in Dr. Bovée's hands, but Dr. Hooe had never been able to discover these structures clearly enough at operation to make any practical use of them. He had been under the impression that ventro-suspension was universally abandoned long ago; the method advocated by Dr. Stone requires too extensive dissection to accomplish so little. The operation which seems best to Dr. Hooe, and which is used very extensively and successfully everywhere else in the country, had not been mentioned by any of the speakers: he referred to what is known as the internal Alexander operation; the abdomen is opened to allow of the detection of complications, the slack of the round ligaments is taken up at the most advantageous point; where the slack exists the technic is the simplest of all the operations for the elevation of the uterus, and the re-

sults are good. He recommended that the gynecologists of Washington familiarize themselves with an operation which elsewhere is superseding older methods.

Dr. A. F. A. King asked Dr. Taber Johnson if he had not reached illogical conclusions from Noble's statistics; what Noble had actually concluded from his figures was that out of 40 women pregnant after ventro-suspension 1 will have some difficulty in labor, due directly to the operation; this is very different from concluding that such complications were due to any of the causes of difficult parturition. Prophylaxis is very important in the retroversion problem, and he agreed with Dr. Hooe that the dorsal position is maintained too long after labor. The abdominal binder was formerly universally used and advocated; but it is now condemned as being one of the contributing factors in the causation of retrodisplacement.

Dr. Hasbrouck said that it is a good surgical dictum that where many methods are urged for the correction of a given condition none will be found always efficacious. He had enjoyed the paper and discussion and had found them helpful. He had never done the Baldy-Webster operation; he had used the Alexander operation, ventro-suspension and other methods, and had had fair results from all, with after-difficulties from none. Of late he had been employing the Gilliam operation, but after Dr. Fry's demonstration of the Baldy-Webster technic he proposed to do the operation as soon as opportunity offered.

Dr. Reichelderfer had had the pleasure of assisting Dr. Fry in some of his earliest operations by the Baldy-Webster method. The principles involved seemed rational and sound to Dr. Reichelderfer, and the immediate results were very good; of course, the end results are of the greatest moment and must be ascertained before conclusions can be reached. After seeing a number of long and attenuated suspensory ligaments resulting from former ventro-suspension operations, it seemed to him much more rational to use the round ligaments after the Baldy-Webster method, even though they be slender, than to depend upon a strip of peritoneum.

Dr. Borden had performed the Alexander, Baldy-Webster and ventro-suspension operations, as well as the internal Alexander operation; he had seen other operators perform them all; but the field was too large to discuss them all. Two factors of a mechanical nature were desirable in any operation for the correction of retrodisplacements: first, the abdomen should be opened to allow of careful diagnosis; second, the suspension should be accomplished without producing abnormal intra-abdominal conditions. The Baldy-Webster operation may give rise to intra-abdominal adhesions; moreover, there may be differences in the strength of the round ligaments. The internal Alexander operation possesses the two mechanical features enumerated and lacks the

disadvantages just attributed to the Baldy-Webster operation, and is, therefore, the best. There is no intraperitoneal lesion produced by the operation; seeing through the median incision the degree of elevation of the uterus, the exact position of the uterus can be determined upon and the exact length of ligament to be brought up can be estimated; the line of the median incision is the only intraabdominal lesion left behind. Therefore, he recommended the internal Alexander operation, and he expressed surprise, as Dr. Hooe had done, that so little mention had been made of it by the former speakers. The after treatment of these cases is important; there is usually a general relaxation and congestion of the pelvic tissues, and he has practiced instructing his patients to assume the knee-chest position several times a day, and while in this position to separate the labia; the resulting influx of air balloons out the vagina, pushes up the uterus and allows the pelvic veins to be emptied of blood; resolution is thus aided.

Dr. Fry thanked the members for their attention and for the discussion. The debate had embraced a wider field than he had intended; the etiology of retrodisplacements was too extensive to be included in so brief a paper. As to the number of operations which have been devised for the relief of these conditions many of them are good in a certain number of cases to which they may severally be adapted; nor did he advocate the Baldy-Webster operation as applicable to all cases. He would enquire: If retroversion is a part of a general intra-abdominal descensus, how does the Alexander operation or any other operation on that principle effect a cure? It is in consideration of this very etiological factor that the Baldy-Webster operation appears more rational than any other advocated because it holds up the prolapsed ovaries. As to the objection that the stronger end of the ligament is thrown out of commission, not much strength is required of the ligaments, as the uterus is merely held forward in a sling so as to allow the pressure of the intestines to fall behind it. He would require demonstration before believing that the outer end of the round ligament is the weaker; as a matter of fact, from anatomical considerations he inclined to the belief that the outer, smaller end is stronger, because it is made up of dense white fibrous tissue, while the inner end is of looser areolar tissue, bands of muscle, and vessels. With the best of care fixation will take place in some suspension cases, and even Kelly, who fathered the operation, has had to abandon it. The Mayo brothers do not even mention hysterorrhaphy in their list of retroversion operations. Dr. Fry had very reluctantly given it up, but had been obliged to bow to the general opinion.

FRACTURE OF THE PATELLA: THE OPERATION OF CHOICE DEMONSTRATED.*

By E. P. MAGRUDER, A. M., M. D.,

Washington, D. C.

Historical Note.—Before the birth of antiseptics Severino, the brilliant Neapolitan surgeon, in 1598, performed the first open-suture operation upon a fractured patella. His patient died. Three hundred years later Lord Lister, the father of antiseptic surgery, repeated the same operation. His patient lived. This bit of history is conclusive of little, but suggestive of much.

Most frequent between the thirtieth and fiftieth year, rare under the twentieth, fracture of the patella is scarcely ever seen in children under ten. Eighty-eight per cent. of the cases are found in men. Of all bone fractures, that of the patella represents 1.4 per cent. The decade between 40 and 50 years yields the largest number of cases.

Types of Fractures.—We may distinguish the open and closed types, the transverse and the longitudinal, the oblique, the stellate and the comminuted. As many as nine fragments have been found in this fracture. Avulsion of the tip and of the basal margin are reported.

The line of division is central, or more commonly below rather than above the middle of the bone. The prepatellar fibrous tear may be above or below the line of bony separation. The lower end is often ruptured; rarely the upper. Twofold and threefold transverse fractures are reported, the latter the result of refracture. In the compound fracture the T or Y type is occasionally seen. The longitudinal form is rare. Comminution is frequent in direct violence, which constitutes 80 per cent. of all fractures of this bone. A fissure fracture may extend to the cartilage without involving it. The fracture may be simply subaponeurotic, with neither displacement nor other symptoms, and discernible only by the x-ray.

Associated injuries are common and very significant. The dense ligamental fascia over the bone is almost always ruptured, the tear extending into the capsule, internally into the reinforc-

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ing tendinous fibers of the vastus internus and externally into the fascia lata, the extensor lateral expansion of the leg. With this condition the prepatellar bursa may be contused and an effusion of blood occur into the joint.

The line of the ruptured aponeurosis is not always identical with that of the fractured bone. More frequently it lies above or below it, an intervening tab preventing bony union. This was the clinical observation of MacEwen and König, afterward verified by Hoffa in his experiments upon the cadaver. Barlöcker reported twenty-eight operated cases, in every one of which he found the fibro-periosteal intervention.

Etiology.—The condition is usually the result of a fall, a blow or a gunshot wound. Bahr and Rossi's statistics show that the effect of muscular contraction has been overrated. In this connection fracture can occur only when the knee is extended. Rossi held that rupture of the quadriceps tendon or of the ligamentum patellae was infrequent, and therefore that fracture was due to a pathological condition of the patella, or to a combination of muscular contraction and of indirect violence.

Symptoms and Diagnosis.—The bone breaks with a sudden snap, heard as well as felt by the patient. The limb cannot be extended. There may be no displacement of the fragments; the separation may be very slight, or, as seen in transverse fractures, lie from ½ to 3½ inches apart, with a very appreciable transverse groove between. Usually the greater the separation the greater the hemorrhage into the joint. If, on the other hand, the fracture is partial or only subaponeurotic, the lateral portions of a capsule intact, the patient may walk without great difficulty. A prepatellar hemorrhagic bursitis may entirely conceal a fracture. Here the x-ray is essential to diagnosis, as it is in the rare, incomplete and subaponeurotic form. Unless the fragments can be pressed together crepitus is absent. With fracture of the patella hemorrhage into the joint is constant. Occasionally it is so great as to rupture the upper portion of the capsule and diffuse beneath the quadriceps. As an aid to diagnosis we have the history of the accident, localized pain and tenderness, disability, abnormal mobility with or without crepitus, the knee joint is swollen and distended with blood, often the finger sinks readily between the fragments. Commonly we see swelling of the knee joint, pain, palpable separation of the fragments, loss of power of extension

—the patient cannot elevate his heel from the horizontal position or, while lying or standing, lift the injured limb from the ground. Mobility of the fragments is the rule; crepitus is less common. In the attempt to coapt the fragments the pain may be marked. There is an independent lateral movement of the fragments, pressure upon either of which is painful.

We must differentiate the swelling of the knee joint—in this condition greatest after eight hours—from a recent traumatic bursitis. In the former the normal depressions about the joint are obliterated, the fluid is intra-articular; in the latter the bulging is circumscribed and superficial. The one condition may complicate the other.

Prognosis.—Aside from age and complications, especially the extent to which the capsule is involved, the prognosis depends upon the treatment. The greater the tear in the capsule and reserve extensors the greater the loss of the power of extension, and, therefore, the graver the prognosis.

Atrophy of the quadriceps, absence of fibrous union and adhesion of the upper fragments to the femur are resultant deformities.

Fracture predisposes to refracture.

Refracture of the patella is more frequent than that of any other bone. In 250 cases of fractured patella there were 30 recurrences, 11 after operative treatment, 19 after the non-operative. In 60 cases treated operatively there was recurrence in one only.

Full use of the limb is rare; complete extension seldom; limited flexion the rule. In actual disability the thigh muscles are atrophied; in full return of function the loss by atrophy is regained, together with the normal size of the thigh.

Refracture is common, seen oftenest during the first few weeks of renewed activity; almost invariably it is within the callus. With refracture may be a complicating reopening of the joint. A refracture with the freshened edges sutured may give a subsequent bony union.

Thiem's studies would lead one to believe that bony union never takes place. Hoffa and others claim that it does. The author can see no reason why bony union is not as possible, as probable, here after exact coaptation and suture of the fragments as it is in any other bone upon which equal care and precision of

adjustment have been exercised. One cannot doubt, however, that it is less common in the transverse than in the oblique or longitudinal varieties. In non-operated cases, especially the transverse, we may safely count only upon fibrous union.

Union is generally secured at the end of the sixth week following operation. Normal function is materially aided by the hypertrophy of the lateral expansion and the contraction of the quadricipital and ligamentum patellae fibers. The latest authorities on the subject say that while bony union has occurred, "it is very rare in transverse fracture" (Keen). "Even in some operative cases which have again come to direct inspection after many months, the union which was so close that no independent mobility could be recognized has been found to be fibrous" (Stimson).

Boeckenheimer in fifty-five cases of fractured patella found lacerations of the accessory ligaments present in forty-eight.

TREATMENT.—*Non-operative and Operative.*—Five factors contribute to improper coaptation of the parts: 1st. Contraction of the extensors; 2d. Tear of the lateral aponeuroses; 3d. Intra-articular hemorrhage; 4th. Fibro-periosteal interposition; 5th. Tilting of the lower fragment forward or backward. Proper treatment, therefore, must correct all five of these defects.

The Non-operative Method.—In the absence of rigid aseptic technic no one at all familiar with these conditions will deny that non-operative procedure is best. Especially in the aged and in those cases where accurate approximation is without difficulty and where contusion is so great as to preclude primary union of the bone. The leg and thigh should be raised to an oblique angle, with a well padded posterior splint, a little wider than the limb, extending from the hip beyond the heel, with the heel itself thickly covered to prevent pressure soreness. Absorption is thus hastened. Aspiration under antiseptic precautions, with elastic compression and massage ten minutes three times a day, are valuable aids. After a lapse of five or six days, when the effusion has subsided, with the limb still extended so that the quadriceps is relaxed, the fragments should be brought in accurate apposition by means of six or eight one-inch adhesive strips applied three or four above, three or four below, the line of fracture, each overlapping one-half the other, and all brought around and fastened to the posterior splint. Finally an additional strip, broader

than the rest, should be applied over the center of the fracture to prevent any tilting upward or forward. It is advisable to leave these firm and untouched for six weeks. An excellent substitute for the posterior splint is a removable plaster cast extending from the groin to the toes, split in the median line after hardening, and held tight by a spiral roller bandage running full length. This permits removal for examination at will and is easily reapplied. At the end of six weeks, with the aid of crutches the patient first places his foot lightly upon the ground, and gradually, as the days elapse, permits it to withstand his weight. It is best to continue this protection and support to the knee for six months, following passive and active motion at the end of the sixth week. Crutches are discarded at eight weeks, the cane and removable splint at six months. Due care during all this time should be exercised to avoid falls and sudden and jerking movements, to prevent refracture.

Hemorrhage, if imminent, may be retarded, if not prevented, by wet compress, bandage, and elevation in the Volkmann splint to relax the extensor; or the region of the knee may be firmly bandaged from below upward with a rubber elastic bandage and put upon a well-padded posterior splint, unmolested for forty-eight hours. If there is much distension about the joint, Schede aspirates.

If open suture is inexpedient Bardenheuer and Lichtenaner use weight extension, 30 to 40 pounds, to relax the extensor, continuing the same from four to six weeks until union is accomplished.

Fibrous union often occurs with a limited extension and flexion, as is seen in the protracted fixation of a plaster splint, with such sequelae as shrinkage of the capsule, adhesions and atrophy of the quadricipital group.

Where the lateral expansions have not been involved, on the other hand, only a small amount of functional impairment may follow the fibrous cicatrix.

Metzger, Tilanus and others have recommended early massage and mobilization. Tapotement and petrissage are begun during the first forty-eight hours following the injury, directed to the joint as well as to the muscles of the leg and thigh, the fragments held the while by an assistant. The upward stroke aids in blood resorption. Individual cases are helped by the faradic

current. Under this treatment passive motion is begun at the end of the first week; the patient is allowed to be up at the end of the second, when light exercise is instituted, first walking on crutches, then with a cane, finally, at the end of the sixth week, discharged.

The extreme methods of zum Busch and of Kraske are not to be recommended, for, as observed by Soutter, the value of massage is unquestionably overestimated. True, it does aid resorption of intra-articular, peri-articular and intra-muscular diffusion. Increase and preservation of muscular tone can only be accomplished through exercise. If the reserve extensors are ruptured entirely, or even for the greater part, loss of function leads to inevitable atrophy of the extensors, in spite of ample massage and early exercise. Further, the muscular contraction under these circumstances separates the fragments more widely and adds to the labor of operative procedure later on.

Aspiration of the blood is unsatisfactory because of the débris, clots, etc., and is attended with the danger of infection.

To despair of bony union at the outset is to acknowledge a misplaced confidence on the part of your patient. On the contrary, it would seem advisable in most cases to attempt exact coaptation and ossific union by the direct method, and to prevent ill results by instituting muscular massage at the beginning, followed by passive motion during the first week and active motion after the second.

The Operative Method.—Trendelenburg recommended a delay of eight days in the operation, with the view to determine the chances of recovery without it, and to allow for subsidence of the swelling. If open suture is clearly indicated why should we delay twenty-four hours unless it be to impugn our present-day technique? Do we not get our patient out just eight days earlier by an eight days' earlier operation?

As a rule, the operation should be as early as possible.

Various incisions are in use, such as the transverse, the longitudinal, the semilunar with convexity upward, the semilunar with convexity downward, the semilunar with convexity inward, the semilunar with convexity outward, and modifications of all six of these.

Some use drainage, some do not. Intra-articular drainage, except in plainly septic cases, is to be condemned.

Some irrigate the articulation, some use the dry sponge, some do neither. The solutions used are bichloride 1 : 1,500, carbolic acid in various strengths, normal salt solution, sterile hot water.

For suturing both hard and soft structures materials of both absorbable and non-absorbable character are in use. Some use pegs. The most common of the absorbable sutures may be mentioned : plain and chromic catgut, kangaroo tendon ; of the non-absorbable are silver wire, iron wire, aluminum bronze wire, copper wire, Pagenstecher thread and heavy silk.

Men of equal surgical skill and ability differ widely as to their methods of operation. What, then, is the best method? The answer to this question should be based not only on theoretical grounds but by the study of the pathological conditions found and the end results.

When operation is clearly indicated the author believes it done best when done quickest. What is the operation of choice for fracture of the patella? Having observed and followed up a number of cases he would humbly suggest the following as the operation of choice : time, as soon as possible after the injury ; ether anesthesia ; the strictest aseptic technique, gloves and exclusively instrumental handling ; the semilunar incision with convexity downward, commencing a little above the fracture line internally and carrying the oval incision downward and below the tibial tubercle and up on the external lateral surface to a point opposite that of the beginning ; the flap turned back upon itself to expose both the fractured bone and the ruptured aponeuroses ; removal of the interposed fibro-periosteum ; thorough and complete irrigation of the joint of all clots and liquid blood with hot sterile normal salt solution (or 1 : 5,000 bichloride, followed by sterile water, if suspicious of the slightest infection) ; stout bone-forceps now hold steadily the fragments while the bone drill, directed obliquely, is passed through each fragment, the holes in the upper and lower fragments being in exact alignment and always as few as possible. Both points of entrance and points of exit in each bone should correspond to those of the other ; the drill holes throughout are from without inward, and, as stated, always as few as circumstances will permit and just large enough to accommodate wire of the smallest practicable diameter ; all drilling is completed before inserting the wire ; the wires, preferably silver or iron, passed, they are grasped with lion-jaw forceps,

and while the assistant carefully approximates the margins the surgeon tightly twists the wires three or four times upon themselves, cuts them off a quarter inch long, bends them down and buries them beneath the fibro-periosteum, which is then sutured above.

If periosteal intervention be present and is ragged when drawn out, its edges should be neatly trimmed of roughened projections, carefully coaptated after the bone suture and stitched first with interrupted chromic catgut and reinforced with a continuous suture of the same material. The rent in the capsule, so common on either side of the fractured bone, is repaired with equal carefulness and with the same suture material. An additional continuous suture of fine chromic gut is used to repair the fibrous covering of the patella incised in raising the oval flap. The skin flap is then sutured with three light silkworm-gut sutures, the first in the center at the tibial tubercle, followed by one each at the halfway point on the ascending lateral line of incision, and this in turn followed by a continuous fine plain catgut suture of the skin wound. No drainage; a moist bichloride compress over the site of the wound is followed by a sheet-cotton bandage from toes to middle thigh, and over this a light removable split plaster cast, applied with the limb in complete extension, in which it is kept, heel slightly elevated, with as little interference as possible for two weeks, when with massage, passive motion, light exercise, walking on crutches, then with a cane, then with cast alone, and finally, at the end of the sixth week, without any support whatever, the patient is discharged as cured.

In support of this method we may cite the following points of advantage: no loss of time; the safest anesthetic; absolute exposure of the entire field of injury, especially of those most important structures, the lateral expansions; an articulation made perfectly clean with a non-irritating solution; a suture too small to excite irritation and one that is non-absorbable, therefore effective to hold till union has had abundant time to take place; no necessity for post-operative drainage; activity too late to fear fracture recurrence, too early to invite atrophy; though of exceptional occurrence, a tear of the accessory ligaments with no separation of the bony fragments noticeable on inspection or palpation would be exposed. Immediate operation admits of union by first intention.

Fibrous union leaves a weakness, an uncertainty, an instability, a timidity on the part of the patient, frequently resulting in his falling, which, in turn, induces refracture. Absolute functional recovery in fibrous union is exceptional.

Small incisions fail freely to expose the operative field, render difficult the cleansing of the joints and the repair of the lateral capsular and aponeurotic tears.

The vertical incision leaves a cicatrix exposed to pressure on kneeling and remains tender, limits the field of operation, makes difficult the passage of wires, the rents in the lateral expansion are not easily gotten at, manipulation of the fragments is difficult.

The transverse incision is open to the objection that often the osseous and cutaneous cicatrices correspond, increasing the facility for compound refracture; infection, too, passes readily from the outer to the inner wound, a stitch abscess may produce a septic arthritis; drainage is difficult.

A flap with convexity downwards has a better arterial and nerve supply; it admits most easily of drainage.

Irritating antiseptic irrigations, such as carbolic acid, bichloride, etc., are injurious to the joint endothelium, lower its resistance to infection and predispose to inflammation. Normal salt solution accomplishes the same purpose as the irritants, without any of their disadvantages. Dry sponging, where the parts may readily be reached, is preferable to either.

The question may be asked, When is the open operation indicated? When contraindicated? It is indicated in fractures productive of functional joint impairment, such as those in which fragments have entered the articulation; in the one-legged, where ankylosis following fracture would produce complete inability to walk; in bilateral fracture of the patellae; in refractures; in ununited fractures, the result of attenuated fibrous union or faulty position; in unrepaired aponeurotic laceration.

The open method may be confidently recommended in the presence of an aseptic environment, a competent surgeon, safe suture material, favorable physical condition of the patient, bad position of fragments, in all compound fractures, all comminuted fractures, in profuse intra-articular effusion, hemorrhagic or inflammatory, in interposition of the fibro-periosteal tissues.

In compound fracture the necessity for open suture is self-evi-

dent; so, too, if bandaging fails, and also in the presence of a weak, extensile fibrous repair.

When is it contra-indicated? In the diabetic, in advanced tubercular disease, in chronic cardiac, renal or hepatic disease, in longitudinal fractures of the closed type and without displacement, in simple subaponeurotic or incomplete fractures, those in which separation of the fragments is so slight as to be barely detectible.

Malgaigne's clamp and Trélat's modification of the same are today merely historic.

Of the subcutaneous work of v. Volkmann, in 1868, of the earlier labors of Kocher, Ceci, Heusner, Butcher, Barker and the rest, we are compelled to make the same objection as to every other subcutaneous method, namely, that the interposition of the periosteum and the lateral tears are disregarded; further, that the joint may be opened. The only point in its favor is the fact that it was the forerunner of the direct-suture method.

As between Lister's transverse incision at the fracture line and a longitudinal or transverse incision not in line with the fracture, the latter is to be preferred. All blood should be removed from the joint, the interposed tissues withdrawn and excised, if ragged; as few holes as possible should be bored through the fragments and these threaded with silver, iron, steel or aluminum-bronze wire, or with strong silk or catgut; the fragments are then drawn together and the knots sunk into the bone. The periosteum and fascia are closed by continuous or interrupted suture, the skin sutured and a posterior splint applied.

Strict asepsis is the first requisite and the last indispensable point in the technique of the open operation. Nowhere are results better with it; nowhere worse without it. An infected arthrotomy is more to be dreaded than an infected laparotomy. Palpation with a gloved hand should be reduced to the minimum. If possible, the operation should be entirely instrumental.

If the quadriceps is much retracted and the attempt to approximate the fragment fails when the thigh is flexed, the muscles fully relaxed and the knee extended, then a plastic operation may be done by division of the ligamentum patellae or the quadriceps.

Where separation is considerable Rosenberger, Helferich, Wolff, Tenderich and others have recommended osteoplastic op-

erations, with varied results. All methods failing, strong elastic bands may be made to duplicate the action of the extensors, and are permanently worn. Ankylosis, following resection of the patella, is better for those who cannot afford expensive apparatus; a last resort, it is true, but to be preferred to a limb incapable of extension.

Suture of the ruptured peri-patellar and para-patellar aponeuroses is of the utmost importance. Whether it be of the quadriceps tendon or of the ligamentum patellae, it is an injury equal in importance to that of fracture of the patella itself. Immediately following fracture of the patella the lateral expansion of the rectus, vasti and sartorius, together with the fibers of the fascia lata, proceed at once upon the vicarious function of extension.

Following are statistics of thirty cases treated in the Massachusetts General Hospital, in which final results were noted:

Unsutured, 6 cases, as follows:

Result.	Cases.	Per cent.
Perfect,	3	50.0
Fair,	1	16.5
Poor,	2	33.5
Serviceable knees,	0	66.5

Sutured, 24 cases, as follows:

Result.	Cases.	Per cent.
Perfect,	17	65.5
Fair,	5	19.0
Poor,	4	15.5
Serviceable knees,	0	84.5

Conclusions.—As between the operative and non-operative methods, in the absence of a competent surgeon, with all antiseptic precautions, the non-operative, conservative treatment should be the rule. On the other hand, operative procedure obtains a better functional result and obtains it much more quickly than the non-operative procedure, and may be confidently relied upon in the hands of those who have formed the habit of taking all the necessary precautions.

With operation the chances for bony union are far greater; the torn aponeuroses can be repaired, and there is far less danger

of refracture. The most satisfactory results are obtained by the oval incision, convexity downward, and suture of the patella; by this method joint diffusion is promptly relieved by irrigation or dry sponging; the fibro-periosteal interposition is entirely removed; apposition of the fragments is exact; tilting is corrected; massage and passive motion can be begun earlier, the whole process of repair, recuperation and convalescence is hastened. It admits of prompt and complete removal of all articular effusions, all extravasated blood, intra- or extra-articular, liquid or clotted, all detached bony fragments.

The subcutaneous operation is today obsolete. Its latest chief advocates, König and Kocher, are now most enthusiastic in their adoption of the open method.

The circumferential loop has few followers, as has that method by which the bony fragments are simply apposed, and the suturing confined to the peripatellar tissues.

The dangers of the open method, done under proper precautions and by competent men, are practically *nil*. A point deserving of special emphasis is the after care of the patient—an absolute requisite to success.

In interposition, operation is imperative.

Wire should never be carried deep enough to penetrate the joint, as it will irritate the cartilage and produce an arthritis.

Impaired function results in union from faulty position.

The combination of the interrupted and reinforced continuous chromic catgut suture is the making of assurance doubly sure.

Absolutely accurate coaptation and repair of the accessory extensor aponeuroses are vitally essential—*in some cases even more important than that of the bone itself*. Eminent authorities to the contrary notwithstanding, bony union of the transverse fracture—the one most difficult of functional repair—can certainly be accomplished if the carefully sutured bone is reinforced by an equally carefully sutured aponeurosis.

If exposure at all is decided upon, then ample exposure of the field of injury, under aseptic precautions, is always justifiable.

Other things being equal, the oval incision, convexity downward, admits of the best drainage, should necessity for drainage arise; while at the same time it retains anatomically the best arterial and nerve supply.

The most progressive European and American surgeons are in

one accord that by far the best results are obtained by the open method and suture.

The suture material, if non-absorbable, should be the smallest consistent with the requirements, and the possibilities of pressure-necrosis should be reduced to the minimum by complete extension of the limb held in the oblique position, which insures the great desideratum of every method of treatment—masterly inactivity of the quadriceps extensor.

Dr. Vaughan said that Dr. Magruder's paper had covered the subject pretty thoroughly; not much remained for discussion. He agreed in the main with what had been said, but not altogether. Any operation on the knee is a serious matter. The first operation for suturing a fractured patella was done in this country by Barton, of Philadelphia, 76 years ago. He passed a wire entirely around the bone; the patient died. The operation was condemned not so very long ago by Wyeth, but now everybody performs it. The mortality in competent hands is one-tenth of one per cent. Dr. Vaughan has operated on thirty cases; in all of them he had followed practically the operation as described by Dr. Magruder. He now uses iron wire exclusively; it is smaller and stronger than silver wire. It does not seem to make any difference whether the operation is done at once or at the end of a week; he has tried both plans with equal success. After the operation he applies no splint, but uses a rather heavy cotton dressing, which prevents too much flexion; he rather encourages about 10 degrees of motion, as absorption of exudation seems to be promoted by it. He keeps the patient in bed about fourteen days; then applies a light starch or plaster dressing, allowing about ten to fifteen degrees of motion, and allows him to get up and walk about. Good results are thus obtained, though not always perfect motion. Union does not take place in six weeks. He leaves a bandage on, to prevent complete flexion, for three months, and six months should elapse before complete cure may be expected.

Dr. Balloch said that he agreed in the main with the essayist and with Dr. Vaughan. It did not seem necessary to use such elaborate after precautions in suture cases; indeed, this was one of the features which commend the open method of treatment, The patient may get back to work so much earlier. He finds that the results are about as good when the sutures are passed through the capsule only as when the bone is drilled. Good leg function may be restored by the closed method, but of course the results are more nearly perfect after operation. He complimented the essayist.

Dr. Magruder, in closing, said that no doubt good results are

obtained with less precautions in the after care than he had advocated in the paper, but some cases will do badly without this extra precaution. It seemed to him proper to safeguard his patient in every way, and to anticipate common contingencies. True, many cases go along all right, but others go along all wrong, and it is the latter, especially the unoperated ones, which should be kept under observation for six months following passive and active motion at the end of the sixth week, protection and support to the knee being continued for six months. In operated cases passive motion and light exercise should begin at the end of the second week, and the patient discharged in six weeks. He was firmly convinced that the removal of the fibroperiosteal interposition and exact repair of the lateral aponeuroses are no less essential to success than suture of the bones themselves.

CASE OF ACUTE PANCREATITIS.*

By GEORGE TULLY VAUGHAN, M. D.,

Washington, D. C.

The patient was a policeman, 60 years old, very muscular and fat, weighing about 250 pounds. He had been in perfect health the greater part of his life, and his last illness began suddenly April 19, 1910; close questioning elicited the information that he had had some slight discomfort in the abdomen for several months. April 19th, while at stool, he was seized with excruciating pain in the abdomen, with nausea and vomiting; Dr. Holden, the attending physician, made a diagnosis of acute gastritis, and, on account of the gravity of the patient's general condition, he was sent to the hospital. Dr. Holden called Dr. Vaughan in consultation on the following day, at which time the pulse was 120 and weak, the temperature a fraction over 99 F. (it was never over 99.8); the vomiting had ceased; there was still much pain in the abdomen, about the navel and a little more marked to the left; no tympany. The symptoms were obscure, but it was agreed that the condition was very serious and that exploration was advisable. Four possible diagnoses were considered, the probability in the order named: (1) volvulus, incomplete; (2) perforation of the stomach, intestine or gallbladder; (3)

* Reported, with specimen, to the Medical Society, April 27, 1910.

acute pancreatitis; (4) embolism or thrombosis of mesenteric vessels.

The operation was done at 5 P. M., April 20th; the pulse then being 150, the temperature 99 and a fraction. Ether was given, after a hypodermic injection of morphia and atropia. No tumor could be felt. An incision was made through the right rectus muscle; the abdomen contained about a gallon of bloody fluid. At this moment the patient began to sink, the pulse being hardly perceptible in the aorta; only a hurried intra-abdominal examination was possible; the belly was filled with salt solution and the wound closed. The patient rallied; the following day the pulse was only 125, there was no vomiting, and he could turn about in bed. The second day after operation, April 22d, his pulse went up and he died.

At the *post mortem* examination the abdomen contained much bloody fluid, like that found at operation; this was in part, but not entirely, the salt solution poured in at operation; there were no clots, therefore there had been no active hemorrhage. No evidence of peritonitis. The hand in the abdomen at once encountered a hard body extending across the abdomen; this was found to be an enormously enlarged pancreas, surrounded by tissue showing extensive fat necrosis; there was no fat necrosis in the parietal fat. The whole pancreas was the seat of a violent inflammation, with extensive hemorrhagic infiltration; its size was multiplied by several times the normal. The origin of the trouble was sought; examination of the gallbladder showed that it was enlarged about three times the normal size, and contained about 200 or 300 small stones; there were, however, no stones or pus in the ducts, and it seemed that the cause of the disease must be sought elsewhere; more careful examination later revealed two little stones in the ampulla of Vater, with a little pus, and the case seemed made out against the gall ducts and the stones. The most interesting feature was the enormous effusion of bloody fluid.

The diagnosis of this condition is most difficult, but is getting easier with the observation and recording of more cases. Dr. Vaughan quoted statistics showing the ratio of mistakes; of 50 cases in which the diagnosis of acute pancreatitis was made, in only five was it found to be correct. Later figures given by Ochsner, in 1909, gave 14 correct diagnoses in 92 collected cases.

How is the diagnosis to be made? There are no definite tests. Fitz counseled that one should suspect acute pancreatitis in every patient who, after good health was suddenly seized with violent pain in the epigastrium, followed by nausea and collapse, and a little later by a tumor and a slight rise of temperature. There are two varieties of the disease: the suppurative and hemorrhagic; the latter is the most dangerous and the most difficult to recognize. Chemical diagnostic tests are not of much avail in acute cases; they require too much time. But in chronic cases we may take advantage of finding recent glycosuria; or we may employ examination of feces for undigested fats and proteids; or the Desmoid test, or the administration of formalinized gelatin capsules filled with iodoform, may throw light on the case. The Cammidge test has not been useful in the hands of many; there is a tendency to discredit it among American investigators as being too uncertain and difficult for practical usefulness. Mayo Robson and Moynihan are the only two men who seem to use it with satisfaction. Fat necrosis is the only pathognomonic sign of acute pancreatitis.

Dr. I. S. Stone had had no experience with hemorrhagic pancreatitis, but would like to hear from those who had seen cases of this disease. Only the suppurative form had been encountered by him. Of course, every abdominal surgeon must be interested in all the diagnostic signs of pancreatitis. The only case at all similar to Dr. Vaughan's in Dr. Stone's practice had been that of a man of 60 years, who had long had symptoms of gastric ulcer and who in fact did have an ulcer on the lesser curvature; in an intercurrent attack of grip, during a vomiting spell he was seized with violent epigastric pain, followed by rapid rise of temperature and pulse rate. The symptoms were those of acute pancreatitis, but a differential diagnosis could not be made. The patient died, and it was found that during vomiting he had ruptured the cicatrix of the ulcer and his symptoms had been caused by the perforation.

Dr. Stone had asked Dr. Deaver's opinion of the Cammidge reaction. Dr. Deaver had at first been enthusiastic about it, until he had found it negative in a case with all the clinical evidences of acute pancreatitis and in which case the diagnosis was confirmed at autopsy.

Dr. Borden said that the Society should feel indebted to Dr. Vaughan for the presentation of so instructive a specimen. The subject of acute pancreatitis comes more and more to the fore, especially since Mayo Robson's work has been published. We

are now at least able to make a tentative diagnosis of this disease. The case presented by Dr. Vaughan was of additional interest as affording a probably clear exposition of the etiology, viz: the stones in the ampulla of Vater, with suppuration, and invasion of the pancreas by the infected fluid on account of the back pressure made possible by the stones. The diagnosis of acute pancreatitis, as had been said, is very difficult and often impossible. Dr. Borden had operated on only one case. In the Island of Jolo an enlisted man was seized with sudden violent pain in the epigastrium, with following collapse. When examined abdominal distension was slight, temperature about 100 F., pulse 110–120; there had been no preliminary illness, nor history of gallbladder disease. The diagnosis of acute perforation was regarded as most probable.

Operation was promptly done; the abdomen contained blood-tinged fluid, the pancreas was exposed and was found to be intensely swollen and congested, giving the appearance of any acute inflammation; fat necrosis was present in the omentum. A large gauze drain was packed around the pancreas, the abdomen was closed in part, and the patient made a slow recovery.

The Cammidge reaction had been unsatisfactory in Dr. Borden's hands; certainly it cannot be depended upon as sought for by the chemists here, but that may be the fault of the test and not of the chemists. The literature gradually tends to throw the reaction into discredit.

Dr. E. B. Behrend said that considerable interest attaches to the extreme violence of the vital reactions of the tissues in this disease; in no other disease are such extreme and rapid degenerative changes to be seen. Two factors are probably concerned in these phenomena: (1) an acute infection causes local tissue degeneration; (2) the pancreatic juices acting directly on these degenerated and defenceless tissues cause destruction of the tissues by digestion. This accounts for the enormous enlargement of the organ; and the action of the pancreatic juices on the walls of the bloodvessels explains the effusion of bloody fluid, while the action of the same juices on surrounding tissues explains the fat necrosis so characteristic of the disease.

Dr. Abbe recounted the case of a woman, 60 years old, who gave a history of attacks of gallstone colic years before; then she became diabetic, in which condition she came into his hands. She was treated by him for this disease for several years; and in the last six weeks of her life the glycosuria had been absent, but she was gradually growing weaker with some evidences of pancreatitis. Then she began to have acute attacks of pain, so severe as to preclude lying down. Finally, as she sat quietly knitting she was seized with violent pain, nausea and vomiting, went into collapse and died in two hours. An item of great interest not mentioned in the literature was observed in this case,

namely, that the attacks came on invariably when the pancreas was active, an hour or two after meals.

He had sought the Cammidge reaction in a number of instances; in some cases it was negative; but he had found several positive reactions in patients with pancreatic involvement, cases in which the condition was not primarily pancreatitis. From his own experience he would give it a certain amount of weight, but it cannot be diagnostic in itself.

Dr. Vaughan, in closing, wished to add only one remark. In reading up the subject he had found the report of one case which had been regarded as typhoid fever, because of the Widal reaction and the rose spots present. The *post mortem* showed the disease to have been acute pancreatitis, and the rose spots were probably foci of fat necrosis under the skin. He thanked the speakers for their remarks.

In Memoriam.

HOWARD HINES BARKER.

To the names of the illustrious dead who have gone from our ranks there must now be added another, that of Howard Hines Barker, M. D., LL. D., an esteemed member of this Society, who died at his home, 1116 H Street, N. W., May 8, 1910, at two forty-five o'clock A. M.

Our colleague, so well known and greatly loved by many of us, was born in this city September 13, 1848. He was educated at Union Academy, Everett Institute and Columbian College, preparatory to later studies for the medical profession, in which he attained an unusual degree of skill, which would have won him fame had it not been that Dr. Barker, like many other good men, seemed to court seclusion because of that sensitiveness or modesty or diffidence that oftentimes shuts men out from a full reward of their real merits.

He was a graduate of the medical department of Georgetown University and received the degree of Doctor of Medicine in 1870. He was a successful physician of more than average ability, that won for him the respect and confidence not only of his many patients but also of his many friends of his chosen profession. As a physician, as a neighbor and friend, as well as a good citizen,

always having the best interests of the community at heart, he well represented the law-abiding, God-fearing type of manhood. Of a kindly disposition, in his own quiet way he enjoyed the companionship of congenial minds. By his unfailing courtesy and characteristic kindness he contributed to the happiness of those with whom he was associated and closely bound in the ties of kinship and affection. His domestic life was ideal, as can be abundantly attested by those who have had the good fortune to enjoy the sociability and hospitality of his home. His deeds of charity cannot be measured, because he never told of them, but this much may be truthfully said, as a recipient of his gratuitous services told the writer of this, "He went about doing good."

The funeral of Dr. Barker was solemnized by simple yet impressive services in his home, Wednesday morning, May 11. Many sorrowing patients, friends and associates viewed his body, and the great profusion of flowers bore abundant and beautiful testimony of the love and sorrow of those to whom he had rendered service and given his friendship.

> "Now to his ashes honor; Peace be with him!
> And choirs of angels sing him to rest!"

Howard H. Barker, to whom was given more than three score years of life on the earth, manifold honors and exceeding peace, was a rare man. His was the force of an unassuming personality. He won many friends and never lost their confidence and esteem. He was thoughtful, sincere and earnest in the expression of his life—faithful to every call of duty and to the principles which commanded his allegiance. He possessed an abiding Christian faith which gave him strength for service to his brother man and a deep serenity of soul.

Dr. Barker by his work and worth has endeared himself to the medical profession of Washington. His name is indissolubly connected with the annals of this Society, and will be remembered and revered so long as there is respect for those virtues which characterize Christian manhood and make possible its highest influences for the welfare of humanity.

The facts and figures of Dr. Howard H. Barker's medical career inadequately set forth his merits and usefulness. It is fitting, however, that they should be briefly summarized in this writing:

Howard Hines Barker, M. D., LL. D., was born in Washington, D. C., September 13, 1848, and died May 8, 1910. He was educated at Union Academy, Everett Institute and Columbian College. His medical education was obtained at Georgetown Medical College, from which institution he was graduated in 1870. He then entered Columbia Hospital for Women, where he was resident physician in 1871. It was probably this experience which established his preference for obstetrics, in which branch of medicine he was especially skilled. He was Demonstrator of Anatomy for two years and Lecturer on Anatomy for one year at his *alma mater*. He was a founder of the Central Dispensary and Emergency Hospital, where for many years he had charge of the department of diseases of women. He was a consulting physician to the Eastern Dispensary and Casualty Hospital. He was a founder, in 1884, of the Medical Department of the National University, and was its Dean and Professor of Obstetrics and Gynecology up to the time of its transfer to the George Washington University. He was a founder of the Washington Obstetrical and Gynecological Society. He was a member of the old Clinico-pathological Society. He was president of the American Therapeutic Society and president of the Therapeutic Society of the District of Columbia. He was a member of the American Medical Association, and president of the Medical Association of the District of Columbia (1904).

In 1890 the National University conferred upon him the degree of LL. D.

In 1872 he married Miss Fannie Rozelle Wilson, of Washington, D. C., who, with one son, Dr. Howard Wilson Barker, survives him.

Dr. Barker was a man of good sense and excellent judgment, a fine physician, who gave his services freely, even when there was no hope of pecuniary reward, and he was a staunch friend.

WHEREAS,* In His infinite wisdom it has pleased Almighty God to remove from among us by death our late associate, Dr. Howard Hines Barker, therefore

Resolved, That the Medical Society of the District of Columbia deplores the death of Dr. Barker, and herein expresses its regret at the loss of so valuable a member of the medical profession and so worthy a citizen.

Resolved, That this testimonial of respect be entered upon the records of the Society and that a copy of the same be forwarded to the family of Dr. Barker.

(Signed) G. WYTHE COOK,
GEO. C. OBER,
WM. MERCER SPRIGG,
Committee.

* Resolutions adopted by the Medical Society, May 25, 1910.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, April 6, 1910.—The President, Dr. Louis Mackall, presided; about 45 members present.

The following candidates for active membership were elected:

Charles Clark Ammerman, George Washington University, 1906.

R. Arthur Hooe, George Washington University, 1906.

Henry W. Miller, Univ. of Toronto, Faculty of Med., 1895.

F. H. Morhart, Columbian University, Med. Dept., 1898.

Elizabeth Sohon, Howard University, 1908.

John Allen, Georgetown University, 1908.

Dr. J. H. Allen, Major, U. S. A., was elected a member by invitation.

Dr. D. S. Lamb presented specimens, as follows: (1) Papyraceous fetus, and (2) another fetus showing arrest of development.

1st. Papyraceous Fetus. Twins; one at about six months, well developed, and lived twenty-four hours; the other at about four months, and, together with its cord, was much shrunken. From a colored woman who had borne one normal infant at term; afterwards had a miscarriage at about 6½ months. Dec. 13, 1909, was delivered of these twins; separate amniotic membranes; no hydramnios. 2d. A heterologous twin fetus and placenta at about three months. The other fetus and placenta were delivered at term.

Dr. Chappell said the chances of infection of the uterus after the death of a fetus and its retention, as in these cases, should be considered among the possibilities. Experience would indicate that infection does not, however, usually take place; nature seems able to protect against this accident.

Dr. Lochboehler said that in cases of bicordate uterus it sometimes happens that both horns become pregnant; under such circumstances it is usual for one horn to abort at about the third month.

Dr. Hickling read the paper for the evening. Title: "Paranoia." Discussed by Drs. Wm. A. White, P. C. Hunt, G. W. Cook, Chappell and Hickling. See p. 227.

Wednesday, April 13.—The President, Dr. Mackall, presided; about 55 members present.

The Treasurer stated that a number of circulars for his use in notifying members of arrears of dues had been printed gratuitously by R. Beresford, printer, and moved that the Society acknowledge the gift with thanks. The motion carried.

Dr. H. D. Fry read the essay for the evening. Title: "Surgical Treatment of Retrodisplacements of the Uterus, with Special Reference to the Baldy-Webster Method of Shortening the Round Ligaments." The essay was illustrated by stereopticon pictures. Discussed by Drs. I. S. Stone, J. Taber Johnson, Bovée, A. B. Hooe, A. F. A. King, Hasbrouck, Reichelderfer, Borden and Fry. See p. 276.

Wednesday, April 20.—The President, Dr. Mackall, presided; about 60 members present.

Dr. F. R. Hagner reported a case of Carcinoma of the Bladder, and presented a specimen removed by a new and original method, which was described. Discussed by Drs. S. S. Adams and Hagner.

Dr. D. S. Lamb presented specimens of Tuberculosis of the Lungs and Intestine.

Dr. Tom A. Williams read the paper for the evening. Title: "Loss of Speech; Discussion of Anarthria, Aphemia, Agnosia and Amnesia." See p. 241.

Wednesday, April 27.—The President, Dr. Mackall, presided; about 65 members present.

Dr. McLaughlin called attention to the approaching celebration by the Medical Society of the State of New York of the eightieth birthday of Dr. Abraham Jacobi, and offered the following resolution of congratulation to Dr. Jacobi, to be read on the occasion. The resolution was adopted.

"The members of the Medical Society of the District of Columbia desire to congratulate their distinguished honorary member, Doctor Abraham Jacobi, of New York City, on the celebration of his eightieth birthday, and hope that for many years to come he may be spared to us as an eminent teacher, wise counsellor and honored physician."

On account of the sessions of the Congress of American Physicians and Surgeons to be held in Washington during the week of May 2d, the Society adjourned until May 11th.

The Treasurer announced that in accordance with the provision of the Constitution certain members had been dropped from the rolls on account of non-payment of dues.

Dr. Vaughan reported a case of Acute Pancreatitis, and presented the specimen. Discussed by Drs. I. S. Stone, Borden, E. B. Behrend, Abbe and Vaughan. See p. 298.

Dr. Jas. Dudley Morgan, representing the Medical History Club, read an essay on the "Life of Laënnec." Discussed by Drs. Shute, D. S. Lamb, G. W. Cook, J. C. Wise, Roy, E. L. Morgan and J. D. Morgan. See pp. 250 and 260.

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Editorial.

THE ANNALS will publish any local medical news concerning the medical societies, hospitals, colleges and other institutions in this District, and the personnel of the same, whenever such news would be of general interest; provided, of course, that the information is given by persons who are known to the Editorial Committee.

PUBLIC LECTURES ON MEDICAL TOPICS.—The City Club of Chicago has inaugurated a free lecture bureau through which lectures on civic and social subjects are offered to the public by members of the Club and others. These lectures are placed at the disposal of churches, societies, clubs and other organizations and are part of a campaign of the Club undertaken to arouse greater interest in civic problems. While most of these lectures have to do with economic and social matters many of them touch on subjects which have a medical interest.

DEPARTMENT OF SURGICAL SOCIOLOGY.—The *American Journal of Surgery* will inaugurate a department of Surgical Sociology for the purpose of encouraging among surgeons an interest in the broader social duties of their professional responsibilities, and to stimulate them to leadership in those social matters that essentially concern them. It will be an editorial department, and will more especially concern itself with the prevention of surgical diseases and injuries, industrial accidents and safety devices; Fourth of July injuries; the care of cripples and those other-

wise handicapped by surgical afflictions; special hospitals, clinics, sanatoria and convalescent homes; district nursing; playgrounds; factory regulations; the prevention of blindness at birth and in the factory; social conditions that affect pregnancy and parturition, etc. The *Journal* offers also to publish communications and suggestions.

The May number contains an editorial on the prevention of industrial accidents.

The American Druggists' Syndicate.—An editorial in the *Old Dominion Jour. Med. and Surg.*, May, 1910, on this subject contains the following remark in regard to the offer of the syndicate to physicians to become stockholders: "What does this mean? It means the education of the druggists in substitution; it means the physician stockholder is an aider and abettor of substitution; it means that the physician advocates the sale of nostrums manufactured by the American Druggists' Syndicate; it means that the physician lowers his professional standing by becoming a commercial participant in the drug trust organized and operated with the avowed purpose of obtaining from the public some of the money now going to patent-medicine manufacturers, and induce the public to use these goods rather than go to physicians for prescriptions; it means that the American Druggists' Syndicate does not think highly of us professionally, has no love for us in offering us a profit in their business, but wishes to use us as stool pigeons to further their money-getting propensities by our moral coöperation as well as by our financial support."

Medical Education in the United States and Canada.—A report to the Carnegie Foundation for the Advancement of Teaching, by Abraham Flexner. With an Introduction by Henry S. Pritchett, President of the Foundation. Bulletin No. 4. Copyrighted.

In this bulletin the Introduction by President Pritchett briefly summarizes the report and comments thereon. Then comes a first part containing fourteen chapters. These contrast the proper and the actual basis of medical education, very much to the discredit of the latter. The Laboratory and Hospital in rela-

tion to the Medical School are considered. There is very interesting reading under the head of "Financial Aspects." Then comes "Reconstruction." The report strongly recommends the *single board* for the registration of physicians; an examination in the basal studies, leaving the matter of treatment out altogether or giving special examinations therein. The report also recommends something more practical than simply a written examination. The weak places in State Board work are pointed out. The Post Graduate Schools are looked on as temporary affairs, and, as they are conducted, have little value; would have none if the medical schools did their work as they should. This first part of the report concludes with a few pages on the medical education of women and of the negro.

The second part takes up by States, alphabetically arranged, the individual medical schools, and points out what they have that is approved and what they lack for satisfactory teaching. The schools in the District of Columbia are discussed on the following pages: George Washington, 22, 31, 32, 39, 112 and 201; Georgetown, 13, 39, 81, 82, 84, 85, 139 and 201; Howard, 147, 151, 181, 202, 203, 282.

Even a cursory reading of the report, which gives a panoramic view of all the medical schools in this country and Canada, showing which are weak and wherein they are weak, which are strong and wherein they are strong, what they have and what they lack, wherein they tell the truth and wherein they lie, should stimulate the weak schools to take measures to strengthen themselves or go out of existence, and the stronger schools to improve their equipment and instruction. Some schools, especially the osteopathic schools, are schools in little more than name. There is an abundance of material for future comment.

Seventeen cents, sent to the Carnegie Foundation, 576 Fifth Avenue, N. Y. City, to cover postage, will secure a copy of the report.

Mortality Statistics of 1908, Bureau of the Census.—Ninth Annual Report, Washington, 1910.

The registration area on which this report is based includes seventeen States, the District of Columbia and 74 registration

cities in the other States. The population of this registration area is estimated at 45 millions, which is slightly more than half the estimated total population of the United States. The total of deaths in the area was nearly 700,000 in 1908, with a death rate of 15.4 per 100,000 of population; a low rate. The report was prepared by Dr. Cressy L. Wilbur, Chief Statistician for Vital Statistics of the Bureau of the Census.

There was a general absence of severe epidemics. Nearly one-fifth of all the deaths was in infants under one year; one-fourth of all the deaths was in children under two years. Of persons 95 years old and upwards 1,502 died. The proportion of deaths in women to men was 457 to 543. Deaths among whites, 645,-562; colored, 46,012, including negro, Indian, Chinese and Japanese. Maryland is the only registered State in which there is a considerable colored population.

The death rate in the rural and urban districts in registration States was as 14 to 16.5. The District of Columbia is regarded as a city. Of the registered States South Dakota shows the lowest death rate, 10.1; California the highest, 18.4. (The death rate for England and Wales was 14.7; for the city of London, 13.8.) It must be remembered that California and several other States are largely health resorts, and this fact partly explains the high death rate. In all the registered cities the death rate was lower in 1908 than in 1907, except Denver, Col., which is a health resort, and Syracuse, N. Y., and Scranton, Pa.; all of these showed slight increases in the death rate. The rate in the City of Washington, including the entire District, was the lowest yet recorded, 19.3, and this relatively high rate is mainly due to the large colored population, about one-third of the entire population.

The following data in regard to individual diseases are extracted:

Typhoid-fever death rate, 25.3; highest in Colorado, 47.4; lowest in Rhode Island, 12.9; yet Rhode Island is the most densely populated of all the States. Washington City (that is, D. C.), 39.4; white 40.3, colored 37.3. The highest rate in other registered cities was 276.0 in Mankato, Minn.; 201.3 in Peekskill, N. Y.; 244.4 in Sharon, Pa.

Malarial-fever rate, 2.5. Washington City, 2.5; white 1.8, colored 4.0. The highest records were 96.5 for Memphis, Tenn.;

122.3 for Savannah, Ga.; 68.2, Paducah, Ky.; 64.5, Wilmington, N. C.; 58.3, Jacksonville, Fla. The disease is no doubt more or less confused with typhoid fever.

Smallpox, 0.2. Washington, no deaths. Highest rate, 4.6 for Omaha, Neb.

Measles, 10.2. Washington City, 0.6. Highest rates: Vincennes, Ind.; 126.0; Braddock, Pa., 88.2; Chambersburg, Pa., 81.1.

Scarlet fever, 12.04. Washington City, 3.2. Highest rates: Pittston, Pa., 299.5; Plymouth, Pa., 146.3; Nanticoke, Pa., 123.4; Duquesne, Pa., 120.0.

Whooping cough, 11.0. Washington, 11.7: white, 3.7; colored, 29.2. Highest rates: Vincennes, Ind., 50.7; Hagerstown, Md., 55.0; Peekskill, N. Y., 53.7; Nashville, Tenn., 67.1; Danville, Va., 61.7; Petersburg, Va., 82.5. The rate was probably greater than stated, some deaths probably registered under broncho-pneumonia.

Diphtheria, 22.3. Washington, 8.5: white, 8.7; colored, 8.1. Highest rates: Fresno, Cal., 79.8; Alpena, Mich., 84.5; Ironwood, Mich., 77.4; Ishpeming, Mich., 160.1; Watervliet, N. Y., 75.5; Carbondale, Pa., 77.6; Duquesne, Pa., 104.0; Mount Carmel, Pa., 128.5; Nanticoke, Pa., 210.6; Phoenixville, Pa., 82.1; Pittston, Pa., 146.3; Stevens Point, Wis., 114.7. And yet this is a preventable disease.

Influenza, 22.2. Washington, 40.3. The question arises whether other diseases are not often incorrectly diagnosed as influenza.

No deaths were reported from typhus or epidemic cholera. One death each from relapsing fever, miliary fever, glandular fever and tick fever. Two deaths each from yellow fever and dengue. Five deaths from bubonic plague. Eleven deaths from leprosy. From erysipelas, 1,815 deaths; dysentery, 2,930; chicken pox, 52; mumps, 28; German measles, 31; beri-beri, 14.

Tuberculosis, all forms, 78,289 deaths; of the lungs, 67,376; meningitis, 4,218; abdominal disease, 2,723; others, 3,972. Rate, 173.9; of the lungs alone, 149.6. These are the lowest rates since 1900. For Washington City the rate was 264: white, 166.9; colored, 477.5. Highest rates in the registration area were, for Fresno, Cal., 427.9; Colorado Springs, 553.1; Denver,

Col., 511.8; Jacksonville, Fla., 479.5; Raleigh, N. C., 534.1; Cranstontown, R. I., 547.1; San Antonio, Texas, 540.8.

Cancer is on the increase; the rate increased to 74.3. But the name is probably applied to some tumors that are not malignant. For Washington City, 87.9: white, 95.8; colored, 70.5. Highest rates are, San Francisco, Cal., 110.2; New Haven, Conn.; 103.5; Boston, Mass., 103.9. It should be remembered that for operative purposes patients go to large cities, and this fact partly explains the large death rate for these cities.

Diabetes, 13.9. Washington, 11.3. Highest rates: Worcester, Mass., 20.9; the Bronx Borough, N. Y. City, 20.0; the Richmond Borough, N. Y. City, 28.1.

Meningitis, not tubercular, but including spinal as well as cerebral, 19.8. Washington, 17.6. Highest rates: Fresno, Cal., 101.5; Biddeford, Me., 120.0; Chicopee, Mass., 100.9; Berlin, N. Y., 107.6.

Apoplexy, including paralysis. For apoplexy alone, 72.1; paralysis alone, 16.8.

Diseases of circulatory system, 179; heart disease alone, 133.3. Washington, 195, the highest of all the registered cities; the next were Worcester, Mass., 187.9; Boston, Mass., 189.6.

Pneumonia, all forms, 136. Washington, 118.2: whites, 72.9; colored, 217.6. Highest rates: San Francisco, 227.6; Fall River, Mass., 203.2; Danverstown, Mass., 362.7; Orange, N. Y., 201.6; Ogdensburg, N. Y., 255.1; Homestead, Pa., 222.1; Nanticoke, Pa., 239.6; Danville, Va., 267.3; Petersburg, Va., 224.7.

Diarrhea and enteritis, 116. Under two years old, 85.3 per cent. of *all the deaths from diarrhea*. Washington, 127.9: whites, 94; colored, 202.5. Highest rates: Fall River, Mass., 380.1; Lowell, Mass., 305.9; Ishpeming, Mich., 330.3; Morristown, N. J., 315.6; Braddock, Pa., 343; Duquesne, Pa., 344; Homestead, Pa., 300.1; Nanticoke, Pa., 348.5; Shenandoah, Pa., 470.1; South Bethlehem, Pa., 352.7; Charleston, S. C., 350.5; San Antonio, Texas, 370.6; Burlington, Vt., 329.1.

Deaths from violence, 116.4.

Deaths from ill-defined and unknown causes, rate, 30; in Washington, 28.7.

The entire report is of interest, and very suggestive that very great improvement could be made in sanitation and preventive medicine.

"Is the Tuberculosis Crusade Losing Ground?"—Under this caption there appeared recently in a Baltimore daily newspaper an advertisement which by imputation endeavors to create the impression that scientific treatment of tuberculosis is proving a failure. That "fresh air and egg-and-milk-gorging treatments" have failed to noticeably decrease the number of new cases. But, if you have consumption and want to be cured, do not waste time and money on reputable medical practitioners or specialists in this disease. Simply buy a bottle of "Swampdoodle's Magic Mess," and, presto! the thing is done. The dead are not actually raised, but the good-as-dead are restored to life and health, according to the testimonials.

Hundreds of thousands of dollars are yearly swindled out of people who can ill afford the loss by alluring visions, in printers' ink, of restored health. And yet, it would appear that any person with two grains of sense ought to know that if these widely-advertised "cures" had any basis in fact, if the remedies possessed the merits some claim for them, millions of dollars could be secured for the formulas. Rockefeller, Carnegie, medical men everywhere would fairly jump at the opportunity to confer upon suffering humanity so great a boon.

The methods adopted by some exploiters of proprietary remedies are despicable, devilish. They play upon the most sacred feelings of the human heart, hold out hope when there is no hope, and accept a man's last dollar for that which they themselves know can bring no permanent relief. Despite the Pure Food and Drugs Act, these vultures continue to feed upon their fellows.

A serious phase of the whole disreputable business is that reputable secular papers, and, God help us, some religious journals, carry these deceitful and oftentimes fraudulent advertisements, thus aiding in the mulcting of their readers. *The Methodist* disclaims any actual knowledge of the particular remedy advertised under the caption at the head of this article, but takes the broad ground that when threatened with pulmonary troubles, or any other, the safe plan is always to consult a reputable physician and let severely alone any and all advertised "cure alls."—*Baltimore Methodist*, June 16, 1910.

Exchanges.

American Journal Surgery.
Buffalo Medical Journal.
Bull. El Paso Med. Society.
California State Journal Medicine.
Colorado Medicine.
Critic and Guide, New York.
Cronica Medica Mexicana.
Illinois Medical Journal.
Journal Camden Co. Medical Society.
Journal Kansas Medical Society.
Journal Medical Society New Jersey.
Journal Missouri State Medical Association.
Journal National Medical Association.
Journal South Carolina Medical Association.
Louisville Monthly Journal Medicine and Surgery.
Maryland Medical Journal.
Monthly Cyclopedia and Medical Bulletin.
New York State Journal Medicine.
Northwest Medicine.
Old Dominion Journal of Medicine and Surgery.
Pacific Medical Journal.
Pathologica, Genoa.
Pennsylvania Medical Journal.
Proctologist.
Providence Medical Journal.
Quarterly Bull., Northwestern Univ. Med. School.
Texas State Journal Medicine.
Virginia Medical Semi-Monthly.
West Virginia Medical Journal.

Books and Pamphlets Received.

Report of Committee of American Gynecological Society on the "Present Status of Obstetrical Education in Europe and America," etc. 1910.

T. A. Williams, Washington, D. C., "Intra-cranial Neoplasms; Remarks on Diagnosis and Indications for Treatment." Also,

"The Pathology of the Cranial Nerves in Tabes Dorsalis;" reprints.

Parker Syms, "Prostatic Obstruction; Indications for Operation, with a Description of a Method of Operating;" reprint.

C. W. Stiles and Jos. Goldberger, "A Study of the Anatomy of Watsonius (*n. g.*) Watsoni of Man, and of Nineteen Allied Species of Mammalian Trematode Worms of the Superfamily *parampliostomoidea.*" Bull. 60, Hygienic Laboratory, U. S. P. H. and M. H. S., 1910.

J. B. Nichols, Washington, D. C., "The Tuberculins and their Diagnostic and Therapeutic Use;" reprint.

The Chicago Pan-Path. Medical Edition, "Cancer and its Study." The *Chicago Night Univ. Bull.*, April 23, 1910.

Report of the Central Indiana Hospital for the Insane, 1909.

Report of Outdoor Maternity Clinic, 216 East 76th Street, New York City, for nine years. 1910.

Report of Committee of 100 on a Standard Curriculum for Medical Colleges. Council of Medical Education of Amer. Med. Assn., 1910.

M. M. Johnson, "Electric Anesthesia;" reprint.

Medical Miscellany.

Polydactylism.—Prentiss reports a case in *Quart. Bull. Northwestern Univ. Med. School*, June, 1910, p. 10. In the same human fetus was a defect in the fronto-nasal process. The study of the case leads him to the conclusion that the extra digits are not reversions but simply duplications of the little finger; are not ascribable to external factors, but might be attributable to some internal influence affecting the germ cells in early embryonic life, and the same cause might explain both malformations. He suggests that of the two parents each may have been predisposed to inherit one of the anomalies; without knowing the history of the case it would be impossible to decide the primary cause.

Maxillary Sinus.—Schaeffer, in *Amer. Jour. Anatomy*, April, 1910, p. 313, has a careful consideration of this subject and of specimens, and draws twenty-two conclusions, from which the following are taken. Dentition does not appear to influence the size of the cavity, which attains its full size between the four-

teenth and eighteenth year; average capacity in the adult, 14.75 cc. Usually the floor of the sinus is from one-half to ten millimeters below the level of that of the nasal fossa. The teeth which are usually related to the cavity are the three molars; the roots may cause elevations of the floor of the cavity and sometimes communicate with the mucous membrane of the cavity. The cavity is often more or less subdivided into compartments and occasionally may be absolutely divided into two cavities by ridges projecting from its walls. The right and left maxillary sinuses are often quite asymmetrical.

Thymus Gland as a Medicine.—Gwyer, in *N. Y. Med. Jour.*, Feb. 19, 1910, p. 373, after three years' use of the gland, believes that it is a valuable treatment for cancer, for diseases due to improper metabolism, and possibly for tuberculosis.

Electric Anesthesia.—Johnson, *Medical Record*, N. Y., April 23, 1910. Cases reported in which the only anesthetic used was a current from storage batteries, capacity 100 ampères each. This current was interrupted six to seven thousand times a minute, the period of passage of the current being one-tenth of the entire time. The interrupter was that of Dr. Robinovitch. The meters registered 54 volts, and four milliampères of the current passed locally through the body of the patient. The electrodes used were: lumbar, 12 by 25 cm.; roller electrode, 2 by 2; leg electrodes, each 4 by 8. The advantages of the method are, that the operation can begin as soon as the circuit is closed, and the patient is conscious but shows little if any concern in regard to the operation. The bad effects of ether anesthesia are, of course, absent.

Leucocyte Count in Diagnosis.—Cherry, in *Maryland Med. Jour.*, June, 1910, p. 210, states that in appendicitis the per cent. of polynuclears above 80 is almost certain evidence of pus; above 85, surely pus, though the quantity may vary from a few drops in the appendix to much free pus in the peritoneum. Such a high per cent. points to pus somewhere, although the strictly medical affections, such as septicemia and acute Bright's disease, must be excluded. In typhoid fever there is a leucopenia, with a relative lymphocytosis; while in osteomyelitis and appendicitis there is a leucocytosis, with an absolute increase of polynuclears. In pelvic lesions purulent conditions are readily distinguished. In mastoiditis the per cent. usually does not reach 80, unless adjacent soft structures are involved. In pneumonia and meningitis the per cent. is usually 80 or more.

Mosquitoes.—The *Scientific American* states that Dr. W. T. Kudlich has called the attention of the Health Board of Hoboken, N. J., to the fact that arzolla, planted in the wet land infested

by mosquitoes, will in a short time cover the marshy land with a layer three inches thick, thus suffocating the larvae and preventing the living insect from depositing its eggs in the water. The plant is a native of Africa, and it is said has been used with some success in the African German colonies. (*Pacific Med. Jour.*, June, 1910, p. 381.)

Bedbugs.—In a London letter to the *Jour. Amer. Med. Assn.* is a statement that to ascertain how long bedbugs may live without food, a number were collected and placed in a clean bottle Sept. 1, 1909. The mouth of the bottle was covered with a piece of clean calico. October 26th all were alive. Jan. 21, 1910, four old ones and one young one were alive. Februry 26th one large bug was running actively over the paper in the bottom of the bottle.

Malaria Treated with Calcium Permanganate.—Stephens, in *Jour. Trop. Med. and Hygiene*, April 1, 1910, p. 102, reports cases, with favorable results.

Pellagra.—Trans. National Conference, Nov. 3 and 4, 1909, under auspices of South Carolina State Board of Health. Among the papers read were the following:

Siler and Nichols, "Aspects of the Problem in Illinois," p. 53, state that a large percentage of the cases gave a history of previous attacks. A large percentage had been insane for many years and gave histories of long stay in institutions. About one-third showed other organic disease, not including dysentery. All cases showed cutaneous lesions involving the back of the hand, and in some cases this was the only symptom. A small percentage of cases showed blebs, and many of these cases died. Symptoms involving the mouth and intestine were characteristic in only the severer cases. The only reflexes of diagnostic value were patellar and plantar; many of these showed departure from the normal. A small percentage of cases were admitted to the Peoria State Hospital for the Insane during the past two years; some of these may be pellagrous insanity. The pellagrous patients at this hospital showed a high degree of protozoal infections of the colon. A study of the patients and diet pointed to some endogenous intoxication. The protozoa may play an important predisposing part in the seasonal production and absorption of an endogenous toxin.

Roberts, "Pellagra, its Etiology, Diagnosis and Treatment," p. 94, states that only three cases had up to that time been reported in Maryland. The disease is caused by the *aspergillus fumigatus*. What are called "fall" attacks are simply the recrudescences after the abatement of symptoms in summer. The

disease should be classed with the infective granulomata. The skin lesions are similar to those caused by an allied fungus, the *claviceps purpurea*, that causes the growth of ergot of rye. To prevent the disease corn meal should be made from properly cured corn. Peas, beans and buckwheat that have lain on the ground should not be eaten ; the aspergillus sometimes grows on them. Many cases follow a wet season ; comparatively few after a dry season. A wet season furnishes an ideal condition for the growth of the aspergillus. What is called the corn-binder is responsible for the recent alarming prevalence of pellagra, because the corn thus bound cannot properly mature on account of the exclusion of sun and air.

Allen, "Amebae in the Stools of the Pellagrine," p. 219, says that pellagra is often complicated by amebiasis ; many varieties of amebae are found in the stools. Pellagra is then liable to be mistaken for amebiasis, and *vice versa*.

Nisbet, "Results of Stomach Analyses in Pellagra," p. 222, states that most cases show a marked diminution in the acid factors of the gastric juice in the late stages of the disease. About half show an excess of mucus during the pellagrous periods. About two-thirds show normal motility. About one-half show the presence of bile during periods of severe vomiting.

Pellagra.—Newman, in *Jour. Med. Soc. New Jersey*, May, 1910, p. 606, reports a case as occurring in a boy ten years old, in Newark, N. J. About eighteen months after the first appearance of the disease the boy died. The history of the case was sent to Lavinder, of the Marine Hospital Service, an authority on the disease, and he considered the diagnosis as *probably* correct.

Hookworm Disease.—Bowman, in *Bull. Manila Med. Society*, April, 1910, p. 76, states that this disease is very common among the Igorot children, but seems to have little, if any, effect on their general health.

Tuberculosis of Endocardium.—Soli, in *Pathologica*, Genoa, Italy, June, 1910, p. 243, reports the case, in a man 44 years old, who had tubercular pleurisy, pericarditis and peritonitis, caseous tubercles of liver, spleen, kidneys and the tricuspid valve ; and miliary tubercles of both lungs, besides pachymeningitis hemorrhagica.

Acid-fast Organisms.—Burvill-Holmes, *N. Y. Med. Jour.*, April 9, 1910, p. 737, states that all waters used in the preparation of solutions, etc., in work which has for its object the demonstration of the tubercle bacillus should be subjected to critical

microscopical examination to discover the presence or absence of acid-fast organisms. These organisms are present in many waters. Failure to decolorize with Pappenheim's solution does not imply that the bacilli present are tubercle bacilli.

Clifford, on p. 740, same journal, as the result of experiments, concludes that acid-fast organisms other than the tubercle bacilli are rarely met with in clinical laboratory work; as a contamination of distilled water, they are a negligible quantity in staining for tubercle bacillus. When, in the examination of tuberculous patients, or those suspected to be tuberculous, acid-alcohol fast organisms having the morphology of the tubercle bacillus are found, after having been stained by the method just mentioned, we are fully justified in making a diagnosis of tuberculosis.

Wasserman Reaction.—Fox, in *New York State Jour. Med.*, May, 1910, p. 256, states that a positive reaction is often obtained in cases of leprosy where there is no history or symptom of syphilis. Sometimes the reaction is very strong, the inhibition of hemolysis being complete. It occurs chiefly in the tubercular form of the disease, especially in advanced and active cases. The value of the test is not affected at all by the results found in leprosy.

Diabetes Mellitus.—Drennan, in *Medical Record*, N. Y., May 7, 1910, p. 794, states that the lipemia of diabetes mellitus is due to the abstraction of calcium salts from the lipoids circulating in the blood. This abstraction is an attempt on the part of nature to neutralize the organic acid which results from the imperfect oxidation of the sugar in the body, fat in the blood being the lesser of the two evils. Fat embolism may occur in the lungs, but may exist quite extensively without causing serious symptoms. The indication in diabetes would be an increased administration of calcium salts to neutralize acids and unite with the neutral fat.

Bacillary Dysentery; its Bacteriology.—Phalen and Kilbourne, in *The Military Surgeon*, April, 1910, p. 433, state that the disease is endemic in the Philippines at all times, occasionally epidemic. There are three bacteria, the well known Shiga and Flexner types and the less known organism of Morgan. It does not appear that the disease as caused by one of these differs in its clinical course, pathology or gravity from the others, and treatment is the same in all. The identification of the bacillus is therefore of secondary importance.

Leprosy.—Cheney, in *Calif. State Jour. Med.*, May, 1910, p. 149, reports the case; boy, 18 years old.

Mali-Mali.—Sison, in *Bull. Manila Med. Soc.*, April, 1910, p. 78, reports a case in a Filipina, 50 years old, whose daughter also was similarly affected. It is a habit spasm allied to Giles de la Tourette's disease, a pure psychosis. The mother had been affected since her ninth year. There are no muscular spasms, explosive utterances, nor any form of mental disturbance. The main feature is the temporary absence of will, *abulia*, induced by the influence of other persons. There is also *echolalia*, the mimicry of words uttered by other persons in a loud and harsh manner; and *echokinesia*, the mimicry of actions, especially if suddenly performed. Fright, excitement and emotion are factors in inducing the necessary receptive condition.

School Children and Their Nervous Systems.—Hartman, in *Penna. Med. Jour.*, May, 1910, p. 587, states that this subject has not received sufficient attention from medical inspectors, and is of the utmost importance from the standpoint of the proper regulation of the physical and mental development of the children. There is no definite knowledge of the part played by any particular study or group of studies or any school occupation in causing nervous affections. He thinks that between seven and twelve years of age overwork at school is of less moment than afterwards; in fact, few children before twelve years do overwork; there is no ambition. But after twelve years, and especially in girls, because of competition and severe examinations and discipline and ambition, there is overwork, and it tells on the nervous system. He recommends the introduction into institutions of higher education of a department for the "study of the child." There should also be more coöperation between educators and physicians, for the purpose of maintaining a better standard of health among school children.

Nursing for the Neurologist.—Tom A. Williams, of Washington, D. C., published an address to the Graduate Nurses' Association, D. C., in *The Trained Nurse and Hospital Review*, N. Y., June, 1910, p. 349. Some good advice and interesting illustrations, especially for those nurses who attend neurotic or insane patients.

Prognosis of Tabes Dorsalis.—The same author, in *West Virginia Med. Jour.*, June, 1910, p. 409.

Early Paresis; Case Illustrating its Arrest.—The same author, in *N. Y. Med. Jour.*, March 19, 1910, p. 601, reports the case.

Cyst of the Arachnoid.—Bush, at a meeting of the Academy of Med., San Francisco (*Jour. Med. Soc. New Jersey*, June, 1910, p. 14), reports the case. On opening the skull the cyst was observed, and the reporter is certain that it was a cyst of the arachnoid; it contained about an ounce of fluid, and was removed. The patient, a young man, had headache and ocular difficulty, both of which were much improved by the operation.

The Bead Test of Dr. Einhorn and Test Diet of Dr. Adolf Schmidt.—Wells, in *N. Y. Med. Jour.*, April 9, 1910, p. 747, states that it takes as much time to make a "digestive capsule" as to examine a stool. It is easier to obtain the beads than it is a proper stool in patients not confined to the house and taking their meals at restaurants. No expert knowledge is required to examine the beads, while some skill is required to examine a stool. The bead test is accurate enough to be of practical value. When the diet is regulated according to the findings after the bead test and the results are not satisfactory the patient should be placed on a strict diet, as advised by Dr. Schmidt, and the stool examined at the end of three days. The bead test shows fairly well how long the food has remained in the bowel, while the test diet does not. The only functions of the bead test are to show the digestibility of proteids, fats and carbohydrates and the mobility of the intestinal tract.

Ascites from Cardiac Disease.—Calderon, *Pacific Med. Jour.*, June, 1910, p. 335, reports a case cured by the intraperitoneal injection of adrenalin and physiological salt-water solution.

Exstrophy of Bladder; the Maydl Operation.—Whitacre, in *Old Domin. Jour. Med. and Surg.*, May, 1910, p. 310, reports the case. The patient, age 21, recovered from the operation. No irritation of the rectum was caused by the urine, which was discharged at intervals of several hours; sometimes there was an involuntary escape of urine. He recommends either the Maydl or Lendon-Peters operation.

Dysmenorrhea.—Bland, in *Jour. Med. Soc. New Jersey*, May, 1910, p. 594, states that dysmenorrhea must be regarded as a symptom and not a morbid process. Painful menstruation does not always indicate the existence of disease in the pelvis. The symptom should not be treated until a thorough investigation is first made into its cause. Opium and alcohol should not be used in treatment except by the order of the physician and only in exceptional cases. Dilatation and curetment are of value in comparatively few cases of dysmenorrhea of functional origin. When due to organic disease the cause should be ascertained and removed.

Report of the Committee of the Amer. Gynec. Society on the present status of obstetrical education in Europe and America; and on recommendation for the improvement of obstetrical teaching in America.

This report is too long to print in full. It includes information received from Great Britain, Germany, Austria, France, Italy and Switzerland; and from seven medical schools in the United States, namely, Columbia, Cornell, Harvard, Univ. Penna., Jefferson, Johns Hopkins and Univ. Chicago.

The committee recommends that the teaching of obstetrics should occupy at least two years of the medical course, and that those who expect to practice obstetrics should avail themselves of elective opportunities. Each undergraduate should attend at least six cases of labor, and under supervision and instruction. All the usual methods of teaching are recommended: didactic and clinical lectures, clinical conferences, ward classes, touch courses, hospital and out-patient instruction, mannikin practice in operative obstetrics, and recitations. The clinical lectures and conferences are especially recommended. Ample facilities should be afforded the student to make antepartum examinations, including inspection, abdominal palpation, pelvimetry, fetometry, vaginal examinations, etc. A two weeks' hospital residence should be required before doing out-patient practice.

Inasmuch as obstetrics includes pregnancy and parturition, their complications and consequences, and the complete recovery of the women after labor, the instruction should include the medical and surgical treatment of these conditions.

The tendency of obstetrics to become more surgical in practice and to require a surgical training is shown by the fact that in the medical schools of Europe and in over one-third of the best in this country the two chairs of obstetrics and gynecology are combined under one head.

The committee consisted of Drs. Cragin, Edgar, Green, Davis, Williams and Webster, with Hirst as Chairman.

Pregnancy Toxemias; Blood Pressure In.—Green, in *Bost. Med. and Surg. Jour.*, April 28, 1910, p. 569, states that the blood pressure bears a fairly constant relation to the other signs, and generally is an index of the severity of the process. Alone, however, it is not a reliable guide; must be correlated with other signs.

Placenta Previa.—Hussey, in *Amer. Jour. Surgery*, June, 1910, p. 168, discusses this subject in regard to treatment, based on a study of 42 cases. His conclusions are that the diagnosis should always be promptly followed by terminating the pregnancy. The main indications are to control hemorrhage, shorten the first stage of labor, and protect the mother from traumatism

and sepsis. Next to hemorrhage, lacerations of the lower uterine segment present the gravest danger, and are always caused by rapid dilatation of the cervix or attempting to deliver through a birth canal that is only partly dilated. If too much consideration is felt for the life of the child, too little may be shown for the mother. In cases near term, if the child is alive the Pomeroy bag should be used. Marginal cases may need but little treatment beyond tamponade or rupture of the membranes; partial and complete cases always demand active intervention. If the cervix is not dilated the Pomeroy bag affords the best means of controlling hemorrhage and dilating the cervix. Those who are not accustomed to using the bag will get the best results from combined version.

Partridge, in *Providence Med. Jour.*, May, 1910, p. 124, states that as soon as the diagnosis of placenta previa is made the pregnancy should be terminated in the manner safest for the mother. If the patient is seen before labor is begun and the child is viable, labor should be induced by the introduction of a *Champetier de Ribes* bag; if the child is not viable, bring down a foot. If labor has begun and the cervix is not dilated, use either method as before labor; if dilated, or nearly so, deliver at once by version or forceps. Give constitutional treatment for the hemorrhage.

Osteomyelitis; Bismuth Vaseline Paste.—Frazer, in *Jour. Missouri State Med. Assn.*, June, 1910, p. 787, reports a case of osteomyelitis in a young man 18 years old. One year after the beginning of the trouble and after other treatment had failed Frazer used a paste of bismuth subnitrate, white wax, paraffin and petrolatum, in the proportions of 30, 5, 5 and 60, injected in a melted state with an aspirating syringe through a long, flexible nozzle. Cold compresses were applied to hasten the hardening. After ten days the paste was removed and came away as a cast, no pus cells in it and no discharge; the cavity looked smooth and glistening. Another injection was used and remained until pushed out by the closing of the sinus. Fourteen months afterwards there had been no return of the trouble; the patient was a clerk in a general store, was able to dance and get around with just a slight limp. There was still a large depression over the malleolus.

Splenectomy in Fractures.—Kanavel, in *Quart. Bull. Northwestern Univ. Med. School*, June, 1910, p. 51, reports a case, and concludes that to remove the spleen when ruptured interferes somewhat with the repair of fractures, and preferably the spleen should be sutured. Splenectomy impairs the regenerative power of bone.

Fracture-dislocation of Shoulder Joint.—A. R. Shands, of Washington, D. C., in *Virginia Med. Semi-Monthly*, June 10, 1910, p. 97. Illustrated.

Treatment of Fractures after Reduction.—C. S. White, of Washington, D. C., in same journal, p. 100.

Early Mobilization in Treatment of Fractures.—H. H. Kerr, of Washington, D. C., in same journal, p. 103.

Abdominal Hysterectomy for Uterine Fibromyomata; Report of 160 Cases.—I. S. Stone, of Washington, D. C., in same journal, p. 110. Of the 160 hysterectomies 130 were supravaginal, with a mortality of 4.6 per cent.; of the 30 total hysterectomies the mortality was 3.3 per cent.

Review.

THE DISSEMINATION OF DISEASE BY DAIRY PRODUCTS, AND METHODS FOR PREVENTION.—U. S. Dept. of Agriculture, Bureau of Animal Industry. Circular 153. Issued April 28, 1910.

This publication of 57 pages is one of the most valuable contributions to the literature, since it contains in a condensed form a summary of the views of experts on the subject of which it treats. The first paper, by Dr. G. Lloyd Magruder, deals with "Milk as a Carrier of Contagious Disease, and the Desirability of Pasteurization." It is gratifying that the author has placed on record the work of a committee of the Medical Society, composed of himself, W. W. Johnston and C. M. Hammett, in the study of the prevalence and causes of typhoid fever in this city, with special reference to contaminated water and milk.

There is no doubt that the local campaign for pure milk, and of which Dr. Magruder has been a leader, had its origin in the findings of that committee, published in June, 1894. My personal interest began after the publication of the Report, and my first tabulation of milk-borne epidemics was made in the early part of 1895, to strengthen the efforts of the Medical Society to secure the enactment of a milk law, which was approved March 2, 1895. In view of the sanitary importance of pure milk, it is pleasing to learn that Dr. Woodward's system of inspections of dairy farms as well as the milk depots, and the inauguration of

reports on so-called "score cards," has been adopted in 39 States and by over 300 municipalities.

The effects of pure-milk legislation upon diarrheal diseases in children under two years of age are graphically shown in a diagram on page 18, and the following passage from Dr. Woodward's report:

"The death rate from diarrheal diseases among infants during the five-year period 1880 to 1884 was 162 per 100,000. During the next five-year period it was 168, and from 1890 to 1894 it was 175. In 1895 the milk law was enacted. From 1895 to 1899 the death rate fell to 135; from 1900 to 1904 it fell to 109, and in 1905 it was only 104, and in 1906, 1907 and 1908 only 97 per 100,000. [In 1909 it fell to 72.]"

Space will not permit us to refer in detail to the milk-borne epidemics of typhoid fever, scarlet fever, diphtheria, streptococcus sore throat, etc., and the important rôle which "bacillus carriers" may play in the dissemination of the germs; such epidemiological facts have become a matter of history, and members of the Medical Society have helped to make this history.

The work of the Washington Milk Conference in 1907, and the editorial comment of the London *Lancet*, pp. 936–937, Vol. II, 1907, is presented, as also Dr. Magruder's letter to President Roosevelt, dated June 11, 1907, which led to the publication of Bulletin 41, of the Public Health and Marine Hospital Service. Dr. Magruder deserves credit for stating just what was done in the way of pioneer work by members of the local profession on the subject of milk in relation to public health; at the same time he has not failed to give due credit to others, as shown by an abstract from Mr. E. Berliner's account of the outbreak of typhoid fever in Cassel, in Germany, in August, 1909.

Dr. Magruder has summarized in his paper the important work of Schroeder and Cotton on tubercle bacilli in dairy products, and Rosenau's and Kastle's conclusions that the common pathogenic organisms are unable to retain their life and virulence when they are exposed to a temperature of 60 C. or 140 F. for a period of twenty minutes, and that the nutritive value and digestibility of milk is not perceptibly affected by this mode of pasteurization. The writer also emphasizes the importance of cooling the milk and keeping it at a temperature not above 50 F., both at the farm and until used by the consumer, and presents the following conclusion:

"It can no longer be doubted that dairy products * * * are excellent culture media for pathogenic bacteria. Outbreaks of typhoid fever, scarlet fever, diphtheria, sore throat and intestinal disorders of children have been definitely traced to contaminated milk. The proofs of the danger from tubercular infection from these products are daily accumulating. The opportunities for such infection are manifold. With the greatest vigilance on

the part of trained inspectors and the greatest care on the part of the householder, this infection cannot be entirely prevented. The householder also has a duty to perform to protect milk from contamination after it has been delivered. * * *

"Under these circumstances there should be no question about demanding that milk should be produced under conditions that would entitle it to be entered under Class 1 (certified milk) or Class 2 (inspected milk), as prescribed by the Washington Milk Conference, or, in case it does not conform to the requirements for these classes, that it should be efficiently pasteurized (Class 3). To produce milk under any of these classes rigid inspection is required."

This conclusion is, in the main, sound and conservative, and should satisfy the opponents of general pasteurization of the milk supply. In the light of our knowledge of "bacillus carriers" it would appear, however, that nothing short of pasteurization will confer complete protection against so-called milk-borne infections, even when such milk is "certified" or "inspected."

Dr. John R. Mohler's paper on "The Importance of a Wholesome Milk Supply" shows that between 15 and 25 per cent. of all the cows which supply milk in the District of Columbia are tuberculous. He also refers to the danger from toxin in milk of tuberculous cows and from tubercle bacilli in dairy products unless the milk has been subjected to lethal temperatures during the process of their manufacture; "to eliminate all tuberculous cattle or to pasteurize all milk from untested cattle should, therefore, be the object of all producers of milk." Dr. Mohler refers briefly to other well-known diseases and conditions which may render cows' milk morbific to man, such as foot and mouth disease, anthrax, cowpox, rabies, inflammatory conditions of the udder and teats, poisonous forage plants, etc.

Dr. E. C. Schroeder's paper on "The Relation of the Tuberculous Cow to Public Health" points out some new and interesting facts, viz: that the commonest way in which tubercle bacilli leave the bodies of tuberculous cattle is *per rectum*, that about 40 per cent. of apparently healthy but tuberculous cattle; which are not known to be tuberculous until they are tested with tuberculin, intermittently pass tubercle bacilli from their bodies *per rectum* with the feces, and since fecal matter is the commonest impurity in market milk he very properly emphasizes this heretofore unsuspected source of danger, which cannot be ignored, since numerous tests of milk purchased in this city showed that one in every eighteen samples contained tubercle bacilli. He regards pasteurization simply an expedient, and as such cannot be used as a final solution of the milk problem.

Messrs. L. A. Rogers and S. H. Ayres present an interesting "Interpretation of Results of Bacteriological Examination of Milk." Dr. M. J. Rosenau points out the advantages and dis-

advantages of pasteurization, and declares, "Theoretically, pasteurization should not be necessary; practically, we find it forced upon us." His article must be read to be fully appreciated and impressed with the correctness of his views; among other statements the following is significant: "The objections to the use of pasteurized milk, even for infant use, are gradually disappearing. It appears that pasteurization is the inevitable outcome of the future, for it will soon be generally recognized that raw milk is apt to be dangerous milk and that treated milk is the only safe milk and will remain the only safe milk for the use of mankind."
—Geo. M. Kober.

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THE SO-CALLED AUTOMOBILE FRACTURE.*

By CHARLES S. WHITE, M. D.,

Washington, D. C.

Since the advent of the automobile, lexicographers have been busily engaged in defining additions to our vocabulary. Medicine and surgery have not been immune to the invasion, and we have accepted at least one term. It is the so-called automobile fracture. The method of naming fractures may have been justified by precedence, as, for instance, the green-stick fracture, which is not unlike a partially-broken switch, or a Tee fracture, which bears a striking similarity to the letter T, but a deduction along these lines would allow us to conceive an automobile fracture to be one which resembled an automobile. It is, in reality, a fracture caused by cranking an automobile, and not simply one caused by horseless vehicles, as we have proof enough that they are capable of producing more than seven and fifty different varieties of fracture. It is sometimes called "chauffeur's fracture," but, as some gentlemen of leisure and affluence crank their own cars, the last title is open to objections.

It has been styled "automobile fracture" because the title would suggest that the fracture is a distinctive type. Such a method of nomenclature, it appears to me, is unwarranted, just as a fracture of the shaft of the ulna, ofttimes caused by the night stick, is called "policeman's fracture." When the pathological or symptomological aspects are unusual or retain a special character, then such an appellation is commendable. It would be just as proper to speak of the "banana-skin fracture" for fracture of the neck of the femur, or "shoot-the-chute fracture" for fracture of the coccyx, or "football fracture" for fracture of the

* Read before the Medical Society, May 18, 1910.

spine, as to speak of Colles' fracture or fracture of the shaft of the radius as an automobile fracture. I believe that a slight consideration of this fracture will convince any one that it has no great pathological novelty, but resembles a fracture we have recognized for years. Because of its frequency and its ambiguous designation I have the temerity to bring it to your attention.

The injury caused in cranking or starting a motor car is due to the engine reversing. It is explained by ignition of the gasoline before the piston has passed dead center. Firing is generally so timed that the explosion occurs after the piston has passed the center. Should it occur sooner from advancing the time of ignition or hot carbonized cylinders, the piston is forced suddenly back, reversing the engine, and the driving shaft, to which the crank is coupled, in turn reverses.

A fracture may be caused by the crank in one of two ways, and the more common method is manifested when the crank is not released by the person manipulating it.

Class A.—If the handle is not released when the engine reverses, the reverse and unexpected motion forces the hand back in dorsal flexion or hyperextension to such an extent that fracture results. This is most likely to occur when the crank is pushed down in starting. The force is exerted exactly as though the person fell forward and struck the sidewalk upon the palmar surface of the hand, except in this case the patient stands motionless, and the sidewalk, figuratively speaking, suddenly bounds up against the hand of the patient.

The force is exerted through the palm of the hand or carpus, and we have one of the three agencies which cause the fracture just as it occurs in Colles' fracture. It may be ascribed to the splitting or crushing of the porous bone between the carpus and the shaft of the radius, or the decomposition of the force in such manner that the brunt is received at the lower end of the radius, which yields at a weak point, or the extreme dorsal flexion causes great tension on the anterior ligament of the wrist and fracture by cross strain.

This class of fractures is much like the classical Colles'. It is usually $\frac{1}{4}$ to $\frac{3}{4}$ of an inch from the lower articular surface of the radius, transverse laterally and oblique antero-posteriorly. The fragment is often wedge-shaped, being about $\frac{1}{3}$ to $\frac{3}{4}$ of an inch at its outer end and tapering almost to a point at the inner or the

ulnar side. The styloid of the ulna may be carried away also, but this is uncommon. Occasionally comminution is seen, but rarely do we find involvement of the articular surface. The amount of actual displacement is not great, and impaction is unusual. In young subjects the fracture may follow the line of the epiphyseal cartilage. All in all, this fracture could be considered a Colles' in its etiology and pathology.

Class B.—In the second variety of so-called automobile fracture the manner of its production is entirely different and the bone lesion is dissimilar. This is most likely to occur when the crank is being pulled up, with ignition early and a reversing engine. The crank is snatched from the hand, and, revolving with great rapidity, makes almost a complete circuit and strikes the posterior aspect of the forearm before the limb can be removed. The violence is inflicted about three inches above the wrist joint, and is generally sufficient to cause a severe contusion or a fracture of the shaft of the radius by direct violence. We have then, in this class, a fracture of the shaft from 2½ to 4 inches above the lower end of the radius, with lateral or antero-posterior displacement of moderate degree. The ulna rarely suffers, but comminution of the radius is not unusual. This fracture does not differ from one caused by direct violence to the lower third of the radius from any cause, but is quite different from the first variety or low Colles. The tracings will clearly indicate both varieties and their differences. I have not seen a fracture of the scaphoid in any injury by an automobile crank, yet it does occur occasionally after falls upon the palm.

From the above brief résumé and study of the tracings the so-called automobile fracture could conveniently be divided into two classes, both in cause and effect, but these two classes are common to violence in other ways; therefore, I would reject the word "automobile" as applied to these conditions, and style them "Colles," or fracture of the shaft of the radius in its lower third, with any additional designation that seems desirable or necessary. We are already burdened with meaningless names, and for the sake of posterity let us confine ourselves to a few plain anatomical ones. They should be a welcome innovation.

The treatment can be briefly stated. Reduction is usually easy under an anesthetic. A molded plaster splint or the circular plaster has been most satisfactory in my hands. An x-ray ex-

amination after reduction is strongly recommended, and is of as much or more value than one made before reduction. Union is generally good in four to five weeks. Involvement of the ulnar styloid may produce slight deformity and retard restoration of function.

Dr. W. P. Carr said that the paper was entertaining and complete; he had nothing to add by way of discussion.

Dr. Groover said that Dr. White's classification of the so-called automobile fractures into two varieties was interesting and novel.

Dr. Frank Leech said that all users of the automobile should be interested in these injuries, and all should agree with Dr. White as to nomenclature. Dr. Leech explained how the injury may be avoided by using the left hand to crank the car.

Dr. Lemon said that it had been suggested in the *Journal A. M. A.* that the fracture may be avoided by standing in front of the car and grasping the crank handle so that the thumb is not opposed to the fingers; a back-fire will thus cause the crank only violently to open the hand and escape from the grasp.

Dr. J. D. Morgan said that he knew a number of users of the gas-motor cars who always use the left hand in cranking their engines; he was contemplating getting a gas car and would like to know the proper way of cranking.

Dr. Jenner said that the proper hand to use in cranking depends upon the direction in which the crank must be turned. If the crank is turned clockwise the left hand should be used; if counter-clockwise, the right hand.

Dr. C. S. White said that the photographs did not illustrate the proper way to crank a car, but merely the way in which the so-called automobile fractures are produced. Most cases are due to carelessness on the part of the operator of the engine.

Water Drinking in Nephritis (*Modern Medicine*, Nov., 1908).—Strauss, in the *Berlin. klin. Woch.*, May 25, 1908, repeats the opinion he previously gave that in most cases of nephritis an abundance of fluids should be allowed, to assist in ridding the system of accumulating poisons. The ingestion of a pint of water increases the blood pressure but little. Dropsy is not a contraindication. Water should be taken in small quantities systematically during the day; it may also be given by rectum, a little at a time.

CASE OF REMOVAL OF THE UPPER EXTREMITY FOR SARCOMA.*

By WM. A. JACK, Jr., M. D.,

Washington, D. C.

S. W., female negro; age, 49; occupation, domestic. Family history: father killed while hunting; mother, two sisters and brother living and in good health; two sisters dead, one of pneumonia, the other of puerperal sepsis.

Personal history: Well as a child. Has had rheumatism, malaria and typhoid fever. About five years ago a small, hard, black pimple was noticed by patient on sole of right foot. This she took to be a corn. It enlarged slowly and apparently was ready to break when she went to the Emergency Hospital, where the tumor was incised, sometime in August, 1908. From this date a constant discharge of a thin, bloody fluid was present, and the growth increased rapidly; was admitted to Freedmen's Hospital Sept. 21, 1908.

On admission a growth the size of a duck's egg was present on the sole of the right foot, with an ulcerated area about one inch square. The growth was excised September 26th. The pathological report was *fibroid*. Patient discharged October 26th, with wound healed.

Was readmitted to hospital January 25, 1909, with an ulcerated recurrent growth at site of former excision. Pathological examination of a section of growth showed a mixed-celled sarcoma. Amputation at junction of lower and middle third of leg was done by Dr. Wm. F. Sowers, February 12, 1909. Patient made an uneventful recovery, and was discharged April 4, with wound soundly healed.

Reentered hospital March 22, 1910. The left hand was involved in a tumor mass which was soft, fluctuating and very painful. The growth extended up the arm, and a distinct mass could be felt in the humerus. A tumor was present on the tibial aspect of left leg (shown very nicely by the radiograph). There was a small growth in the right tibia about one inch above the amputation wound. Nodular growths on several of the ribs. Soft, bluish tumor about one inch square on right hand, which

* Reported to the Medical Society, May 11, 1910.

patient states is the way the growth started in left hand. Patient was anemic, had lost weight and was suffering constant pain in left hand. The pain became so bad that she begged for relief.

On April 4, 1910, a Bergers removal of the extremity was done. The subclavian vessels were ligated with No. 3 iodized catgut, care being taken to follow out the technic of Wyeth, published in 1882, of only using sufficient force to bring the intima in contact without rupturing the coats of the vessels. The supra-scapular and posterior scapular arteries were tied before cutting the scapula loose, thus rendering the operation practically bloodless. No trouble was experienced in closing the wound, which was sutured without drainage. Primary union was secured throughout (shown by the accompanying photographs). The patient was out of bed on the fifth day after operation.

There was no shock during or after operation, which can be attributed to the method of anesthesia. Hyoscyamin, gr. 1/100, morphia, gr. ¼, strychnia, gr. 1/110, was given as a deep muscular injection one hour before operation; 80 gms. of ether were used during operation.

Pulse before operation, 130, after operation, 128; no change in volume. Salt solution, 500 cc., was given under breast as a precautionary measure.

May 7th injections of Coley's mixed toxins were begun. This delay was due to the long time it requires to obtain things in a Government institution.

The pathological report by Dr. Van Swearingen is as follows:

"The tumor is extremely cellular, nearly all varieties of C. T. cells being present; there are large, medium and small-size round cells; large and small spindle, only a few of the latter, however, and giant cells; the giant cells are more or less round and contain three or more nuclei. The medium-size round cell is the predominant one.

"The vascular supply, for the most part, consists simply of spaces without definite walls; in the denser portions of the tumor well developed blood vessels may be seen, and a few of these contain tumor cells free in the lumen.

"Numerous mitotic figures may be seen throughout sections."

Dr. Borden asked why the high operation had been selected in a case with involvement elsewhere?

Dr. Jack replied that there was a tumor in the outer end of

the clavicle and in the upper part of the humerus; healing, of course, could not be expected if the amputation had been done through diseased tissues.

Dr. Borden asked why any operation at all was done?

Dr. Jack replied that the operation was necessary to relieve the patient of a distressingly painful member.

Dr. W. F. M. Sowers said that Dr. Jack was to be congratulated on the lack of shock and the recovery of the patient, who was very ill at the time of operation.

CASE OF AN ACUTE, FEBRILE AND PROBABLY INFECTIOUS DISEASE OF UNKNOWN ORIGIN.*

By L. L. LUMSDEN, Passed Assistant Surgeon, P. H. & M. H. S.,

Washington, D. C.

R. F., male, white, age 9 years, began to complain of slight headache and anorexia and nausea about June 9, 1908, but continued at his usual activities until June 13th. On the morning of June 13th, after being out in the sun for an hour or more delivering newspapers, he returned to his home, complaining of a very severe headache, and appeared to have considerable fever and to be somewhat confused mentally. He was put to bed and, as the fever continued, a physician (Dr. Chappell) was called on the morning of June 15th. The patient's temperature then registered 103.

The temperature the next day was not recorded, but from the patient's apparent condition it was supposed to be about the same as on the 15th. On the three days following the temperature and pulse were as follows:

Temperature, June 17th, 103.8; pulse, 100. Temperature, June 18th, 103.8; pulse, 96. Temperature, June 19th, 103.2; pulse, 96.

Unfortunately for the purpose of this history, the temperature and pulse readings subsequent to these dates cannot be given exactly, as such record as was made was not preserved. The recollection of the attending physician and of other persons in attendance, however, is that the patient's midday temperature and pulse rates continued, with possibly slight variations, at about

* Reported to the Medical Society, May 11, 1910.

the same as on these three days until the early morning of June 25th.

So far as can be ascertained, the patient on the afternoon of June 24th appeared to have high fever, and was regarded as being critically ill. In the early morning of the 25th he appeared to be very much better than he had been at any other time since the definite onset of the illness, about thirteen days before. When seen at 11 A. M. on the 25th the patient's temperature was 101.8; he was feeling quite comfortable and looked bright and cheerful. The headache, which had been very severe throughout the attack, was gone, and the patient's general condition presented a striking improvement over that of the day before. The temperature record was not kept from then on, but it is the impression of the nurse and of others who were in attendance that the temperature continued to fall rapidly, and certainly within a day or two after the 25th of June reached normal and remained normal. From the incomplete records, and as far as can be recalled by the attendants of the patient, after a lapse of two years, it seems that this was a case of fever which, after a period of slight prodromes for three or four days, had an abrupt onset, the temperature rising rapidly and reaching a point between 103 and 104 within two or three days, remaining quite steady at about this point for about ten days more, and then falling, either by crisis or by rapid lysis, and reaching normal within less than seventy-two hours after defervescence had begun.

The patient's convalescence was uncomplicated, rapid and quite satisfactory. He was allowed to sit up on July 4th, and was able to walk about quite well two or three days later. At some time between the third and the sixth day after the definite onset of illness a skin eruption appeared which persisted apparently as a single crop until after defervescence. When I saw the case for the first time, on June 25th, the eruption was maculopapular in character. The spots were very slightly, if at all, raised, and varied in diameter from about two to four millimeters. The color was a dusky red, considerably duller than the red of typical typhoid rose spots. On pressure the color diminished but did not disappear, a brownish or purplish stain remaining when the pressure was sufficient to make the skin pronouncedly anemic. The eruption involved both the upper and the lower extremities.

A careful search was made, but none of the spots could be found on the trunk, neck or face. The eruption was sparse on the shoulders and hips, and became more profuse as the extremities were descended, being thicker on the forearms and legs than on the arms and thighs, and thicker on the backs of the hands and feet than on the forearms and legs. No spots were observed in the palms or on the soles. The spots were round or oval in outline, the periphery not being sharply defined but fading gradually into the surrounding skin. My recollection is that in places on the wrists and ankles, and on the backs of the hands and feet, there appeared to have been a coalescence of two or three spots. The eruption was very striking and very different from any that I have ever seen in an undoubted case of typhoid fever.

Among the other somewhat striking features of the case were a rather severe bronchitis, which persisted as long as the fever continued; a very severe headache, not in any particular part of the head, which continued until the beginning of defervescence; marked congestion of the conjunctivae, and rather obstinate constipation, enemata being required to secure a movement of the bowels. There was slight nose-bleed on one or two occasions while the fever was high. There was no labial herpes; no retraction of the head; very slight, if any, stiffness of the neck; no convulsions. Kernig's sign was not present on June 25th. The patient showed considerable restlessness while the fever was at its height, and was at times delirious.

Results of Laboratory Tests.—On June 22d (about nine days after the definite onset of illness) Dr. J. B. Nichols made a Widal test and a leucocyte count. He reported the Widal reaction (dilution, 1:30; time, 1 hour) negative, and the result of the leucocyte count as follows: Number of leucocytes per cubic millimeter, 17,400.

Relative numbers of leucocytes:

	Per cent.	Number counted.
Small lymphocytes,	15.7	47
Large lymphocytes, Large mononuclear, Transitional,	3.3	10
Polymorphonuclear,	80.3	241
Eosinophile,	0	0
Mast cells,	.7	2
	100.0	300

On June 25th I made a blood culture for typhoid and paratyphoid bacilli and a Widal test. The results were negative. I obtained from the patient on June 29th another specimen of blood for Widal tests, and also specimens of feces and urine for bacteriological examination. The blood serum, in dilution of 1:40, failed to agglutinate typhoid and paratyphoid (A and B) bacilli in two hours. The results of examination of the stools and urine were negative for typhoid and for (A and B) paratyphoid bacilli.

The results of the laboratory tests certainly constitute a strong point in the evidence against the case having been either typhoid or paratyphoid fever.

Differential Diagnosis.—In attempting to make a diagnosis of the case I have considered the following diseases: (1) Typhoid fever. (2) Paratyphoid fever. (3) Cerebro-spinal fever. (4) Influenza. (5) Typhus fever.

Against typhoid fever and paratyphoid fever are the following points:

(*a*) The leucocytosis. (*b*) The negative results of the Widal tests and of the bacteriological examinations of the blood, feces and urine. (*c*) The character and distribution of the skin eruption. (*d*) The course of the fever. Although no one of these points may be taken to absolutely exclude typhoid, yet, when put together, they seem to me to constitute a complex which one could never reasonably expect to find in any single case of undoubted typhoid fever.

Against cerebro-spinal fever are the following:

(*a*) The regularity of the fever. (*b*) The striking skin eruption. (*c*) The comparatively low leucocyte count. (*d*) The absence of the usual pronounced nervous signs. (*e*) The rapid convalescence. No lumbar puncture was made, and cerebro-spinal fever cannot be absolutely excluded; yet it seems highly improbable that the case was one of this disease.

Against influenza are:

(*a*) The striking skin eruption. (*b*) The regularity and duration of the fever. (*c*) The rapid and uncomplicated convalescence. (*d*) The epidemiological features. Influenza was not prevalent to any considerable extent in the vicinity, and no other cases occurred in the household consisting of two adults and five children.

Against typhus fever are:

(*a*) The epidemiological features alone. Had the boy been exposed to known typhus-fever infection the case might readily have been considered one of mild and, perhaps, slightly atypical typhus.

The American Journal of Medical Sciences for April, 1910, contains an article on "An Acute Infectious Disease of Unknown Origin," by Dr. Nathan E. Brill. The report comprises the results of a clinical study based on 221 cases which have occurred in New York City since 1895. Since reading this article I have been of the opinion that the case of R. F. was very probably of the same nature as the cases of which Brill has made such an admirable study in New York. My report of this case this evening, therefore, is an instance of a diagnosis ventured two years after observation of the case.

To Dr. J. W. Chappell and Dr. S. S. Adams I am indebted for the opportunity to see and study the case, and to them and to Dr. J. B. Nichols I am indebted for many of the points in the history.

Dr. Chappell said that if Dr. Lumsden was correct in concluding that the case in question was one of a new disease it was important that all the data should be given in detail. The case having been observed by himself he was able to say that Dr. Lumsden had described the features of it correctly. The boy was taken sick while selling papers, June 15th, the day being excessively warm. Dr. Chappell had first thought it a case of heat prostration, but after the first day or two the boy became stupid and the illness assumed the appearance of typhoid fever. Meningitis was considered as an explanation of the illness, but the idea was soon abandoned. After the eruption came out fully the diagnosis of typhoid fever had to be given up; the exanthem was different from rose spots—was entirely unlike the very exaggerated eruption sometimes seen in typhoid. The very exhaustive investigations, bacteriological as well as clinical, failed to disclose the nature of the disease. His recollection was that the illness continued about twenty days; the fever began abruptly and ended abruptly; the disease was certainly not like typhoid, but it did not seem to him impossible that it was an atypical case of that disease. He felt indebted to Dr. Lumsden for his painstaking study of the case.

Dr. S. S. Adams said that he was sorry not to have heard Dr. Lumsden's paper descriptive of this case. Dr. Adams remembered the case very well, having seen it with Dr. Chappell. Un-

til the laboratory investigations were made Dr. Adams had had no hesitation in agreeing with Dr. Chappell that it was a case of typhoid fever. Of course, we can attach no significance to irregularity of the course of fever in typhoid in children ; and he cited a number of cases in which the onset had been abrupt ; probably ambulant cases in the beginning. As to the Widal reaction we know very well that it is often absent at first. It was a surprise to him to hear that this case had been regarded by Dr. Lumsden as an instance of a new disease. Abrupt subsidence of fever is not unknown in typhoid in children, and the twenty-day course in this case seemed to him significant.

Dr. Lumsden was glad to hear a discussion of the symptoms in this case by physicians who had seen the boy in the attack. Reference had been made to the twenty-day duration of this case; the records showed that on June 25th the fever abruptly fell to a lower plane and the boy was much better. In Brill's disease the duration of the fever in about 50 per cent. of the cases is from twelve to fourteen days, but in one case reported by Brill the fever continued for twenty-two days. Dr. Lumsden had felt that it was impossible to make a perfectly positive diagnosis in this case, but in three particulars it was not typhoid : the eruption, presence of leucocytosis, repeatedly negative Widal reaction, cultures from blood and stools were all negative for typhoid.

Club Practice Degrading.—The physicians of Laporte, Ind., are to be congratulated on the stand they have taken. It is to be hoped that their opposition to this vicious lodge-practice business will be so thoroughly successful as effectually to put a stop to any further efforts along that line in Laporte. The experience of physicians in that city should serve as a warning to the members of the profession, and especially to county societies in every part of the country. There is no possible argument by which such prostitution of the profession can be justified, either from the standpoint of the physician or of the patient. The only person who can possibly profit by such an arrangement is the middleman, who, if he can reduce some shortsighted physician to a state of peonage and farm out his "professional services" (God save the mark) for $2 a year to gullible members of the laity, who may be overcome by their bargain-counter proclivities, may realize a handsome income. To any one else such an arrangement can only result in disappointment. It is to be hoped that in every community in which effort is made to secure the services of physicians on such ridiculous terms, members of the local profession will follow the example of the Laporte physicians and settle the matter promptly and finally.—Jr. A. M. A.

REVIEW OF RECENT PROGRESS IN PHARMACOLOGIC THERAPEUTICS.*

By W. M. BARTON, M. D.,

Washington, D. C.

I have chosen to confine my remarks this evening to one phase only of therapeutic developments during the past year, namely, that which deals with treatment by drugs. The reason for this is twofold. First, the pharmacologic questions discussed are, in themselves, of sufficient importance to justify a separate treatment. Secondly, to attempt to discuss the general subject of therapeutics, including, as it does, so many subdivisions, is manifestly impossible within the limits of a review.

In dealing with my subject I will take up some important groups of drugs and try to briefly indicate what developments have recently occurred, both as to the introduction of new members, where these are judged of sufficient importance, and also as to new facts which have accumulated concerning the older members of the groups.

The Epinephrin or Adrenalin Group.—Adrenalin has come in for a goodly share of attention from pharmacologists and clinicians during the past year. One of the most important publications on the subject has come from the Hygienic Laboratory, in the form of Bulletin No. 55, by W. H. Schultz, Assistant in Pharmacology. The author reviews the earlier methods of research as applied to the adrenals, and the development of the idea that the toxic substance of the adrenals is a distinct compound capable of isolation. Also, the separation of adrenalin in the pure form, the synthesis of its racemic form and the splitting of the racemic compound into its laevo- and dextro-rotating components. The author then gives the results of his own experimental researches on the pharmacological activity of the adrenalin bodies, including blood-pressure experiments, toxicity experiments and measurement of mydriasis in frogs' excised bulbus.

The substances used in his experimental work were natural laevo-rotatory and synthetic dextro-laevo-rotatory adrenalin hydrochloride or chemically orthodihydroxy-ethanol-methylamine hydrochloride; arterenol-hydrochloride or orthodihydroxy phe-

* Read before the Medical Society, May 18, 1910.

nyl ethanolamine hydrochloride, and homorenon hydrochloride or orthodihydroxy-phenyl-aceto-ethylamine hydrochloride. The author concludes from his researches: 1st. That the pupil method as modified by himself is a reliable assay for adrenalin, but less delicate and more tedious than the blood-pressure method; 2d. That synthetic dl adrenalin is less active as a vasoconstrictor and as a mydriatic than natural l adrenalin, the ratio being 2 : 3; 3d. That the relative vasoconstrictor activity of the catechol derivatives in the order named, l adrenalin, dl adrenalin, arterenol and homorenon are to each other as the inverse ratio of 1 : 1.5 : 1 : 80; 4th. That the toxicity of these substances in the order named above are to each other as the inverse ratio of 1 : (1.5 : 2) : 5 : (71 to 80); 5th. That the relative physiological activity of these catechol derivatives depends upon the part of the molecule partaking of the nature of a secondary alcohol or of a ketone, also upon the nature and number of groups displacing the hydrogen of the amine group and upon the arrangement of the asymmetric carbon atom in space.

The same author (Schultz), in Bulletin No. 61, has discussed the relative physiological activity of some commercial solutions of epinephrin. Of seven different brands examined only three possessed an activity that equalled the standard, the others varying from about 4 to 70 per cent. of the required strength. Some of the solutions were worthless. Certain solutions quickly deteriorated after opening the original package. The solutions which equalled the activity of the test solution were adrenalin and supracapsulin.

Physiological tests for adrenalin have been lately much used. One method which has come into special prominence is the determination of the degree of mydriasis produced upon the frog's pupil. Schultz in a recent article has shown that in order to detect with excised frog's eye the difference between natural l-adrenalin base and synthetic dl-adrenal base one must use eyes as nearly alike as possible, preferably one solution upon the right eye and the other upon the left eye of a given frog. His experiments show that there is an upper and a lower limit of concentration beyond which solutions of adrenalin fail to yield graduated results. He believes that the dilation time is a better index of the relative physiological activity of two adrenalin solutions than is the degree of mydriasis. The pupil should dilate in length of axis not

less than .4–.5 mm. and remain so for some hours. For white mice the lethal dose is .008 mg. per gram of body weight for the natural base and .012 to .016 mg. for the synthetic base.

Wiggers has recently discussed the action of adrenalin on the pulmonary vessels, which is known to be slight, and has shown that the effects are closely dependent upon the viscosity of the fluid used in perfusion experiments.

Pressor substances with an action similar to epinephrin have for sometime been known to occur in putrid meat (Abelous). Dixon and Taylor found such substances in the placenta which had undergone very slight putrefaction, and Dixon discusses these substances in an article in the *Brit. Med. Journal.* The chemistry of these products has not been entirely worked out, but Barger and Walpole have isolated isoamylamine and parahydroxy-phenyl-ethylamine from them and from a mixture of human feces, broth and tyrosin. It is possible that these substances may be formed in the human intestine and absorbed, and may play a part in the production of the hyperpietic stage of arteriosclerosis.

The Narcotic Series. (a) *Alkaloidal Narcotics.*—These include the artificial morphine derivatives, ethyl-morphine or dionin and acetyl-morphine or heroin, both of which seem to be waning somewhat in popularity. The extravagant claims made by manufacturing chemists that the volume increase of individual respirations overcomes the effects of slowing produced by these drugs has not been verified. Habit formation has been found to be readily produced by heroin, and the withdrawal of a drug from habitués is attended by rather alarming respiratory failure. The use of these derivatives in the treatment of cough, dyspnea and spasm, has not been found to offer any advantages over the parent drug, morphine, or the natural substitution product, codein (methyl-morphine).

(b) *The Methane Narcotics.*—To this series belong chloral, its congeners, and the hypnotics generally, and almost every year sees new additions to the group.

There is little to be gained by multiplying drugs of this character, since the presence of chlorine in the methane molecule always confers its characteristic depressant qualities, and, although a diminished toxicity is claimed for some of these substitutes, the range of dose is found to be always the same and not

greater than that of the parent substance, chloral. For these reasons chloral has not been displaced by any of its congeners, though it has been before the profession for nearly forty years.

The bromine-bearing hypnotics and sedatives (bromide substitutes), neuronal, bromoform, brometone, bromural, bromipin, sabromin, have not received any additions during the year, and, as a matter of fact, the further multiplication of bromine-bearing drugs is quite superfluous.

The multiplication of non-chlorine, non-bromine-bearing hypnotics still continues, and the race for supremacy among these products is intense. Among drugs of this class which have been introduced in recent years perhaps the most popular, if not the best, is veronal, diethyl-barbiluric acid or diethyl-malonyl urea, a ureide derived from diethylmalonic acid and urea.

$$CO < \begin{matrix} NHCO \\ NHCO \end{matrix} > C < \begin{matrix} C_2H_5 \\ C_2H_5 \end{matrix}.$$

This substance has been pretty well tested out in the past few years. It is quickly absorbed when given in solution, and in small doses produces sleep without other effects. In large doses a reduction of body temperature occurs, and trembling and restlessness during sleep have been observed, particularly in animal experiments. Its toxicity is low after small doses, but it is by no means devoid of poisonous action, and deaths have occurred after careless use. I have seen one case of habit formation. The sodium salt of diethylbarbituric acid (veronal) has been found to be more soluble than veronal, and its administration by hypodermic injection has been proposed. This salt is on the market under two proprietary names, medinal and veronal-sodium.

The Acetanilid-Antipyrine-Phenacetine Group.—This, the so-called antipyretic analgesic group of drugs, has always come in for its annual share of new additions. But though its membership is being constantly increased in this way there is a distinct tendency on the part of the physician at the present day, desiring that his employment of drugs shall always be rational, to receive the new additions to this group very sceptically. Indeed, it would appear quite unnecessary to attempt new syntheses of drugs which depend for their activity upon the liberation of para-amido-phenol substances in the organism.

The old question of diminishing the toxicity of acetanilid and

antipyrine by the addition of caffeine, which was so universally taken for granted a few years ago, has been reopened during the past year in this country, and the prevailing opinion completely reversed. In a very important bulletin, No. 53, issued from the Hygienic Laboratory by Worth Hale, Assistant in Pharmacology, the influence of certain drugs (caffeine, sodium bicarbonate, etc.) upon the toxicity of acetanilid and antipyrine is discussed. The experimental work described in this thesis takes up two phases: 1st. The action of acetanilid and antipyrin alone on heart action, as shown by perfusion experiments upon frogs and dogs, followed by perfusion of the same drugs admixed with caffeine or sodium bicarbonate. 2d. The determination of general toxicity of acetanilid and antipyrine upon mice and guinea pigs.

In the toxicity experiments the drugs were given, hypodermically and by mouth, to different sets of animals. With this as a basis the influence of additions of caffeine and sodium bicarbonate was determined in the same way. As a result of his experiments Hale concludes that the deleterious effect of acetanilid upon the heart is very imperfectly antagonized by caffeine. On the power of cardiac contraction there is no antagonism and in some cases actual synergism. The reduction of heart rate produced by acetanilid *is* overcome by caffeine. The toxicity experiments demonstrated that the intact animal was poisoned more readily by acetanilid and caffeine combined than by acetanilid alone, and that this action is not only a result of summation but also of synergism; that is to say, the two poisons produced their effects as two poisons and not simply as though an increased dose of acetanilid had been given. Sodium bicarbonate, however, was found to lessen, to a marked degree, the depressing effects of acetanilid upon the heart. A lessening of general toxicity was also shown, acetanilid, when given alone, proving to be far more toxic than in mixtures of alkalies. Sodium bicarbonate might be well used in acetanilid poisoning in man.

The combinations of the alkaloids of opium with acetanilid were found to increase the toxicity, while mixtures of salicylic acid and the bromides had no effect. The author's results with antipyrine were the same as with acetanilid, with the exception that sodium bicarbonate was less of an antagonist to the heart depression produced by antipyrine and did not seem to lessen the toxicity at all in experiments upon the intact animal.

In multiplying drugs of the acetanilid antipyrine phenacetin series the tendency has been to construct the newer members upon the basis of the last two, antipyrine and phenacetin, owing to their lesser toxicity. It is rather fortunate that the past year has not witnessed any great extension of this already overcrowded group, so that the individual members in anything like common use remain practically the same. For antipyrine (phenyldimethyl-pyrazolon) they may be enumerated as follows: pyramidon, salipyrine, ferropyrine, tussol. For phenacetin as follows: phenocoll, eupyrine, salophen, thermodin, triphenin.

The Digitalis-Strophanthus Group.—The question of the standardization of the members of this series has always been an exceedingly important one, and many attempts have been made to fix upon a method of biological assay which would give fairly uniform practical results. The question has not yet been solved, but a very important contribution to it was made during the past year by Edmunds and Hale in a work published as Bulletin No. 48, from the Hygienic Laboratory, on the Physiological Standardization of Digitalis. As is well known, there is no chemical method of assaying this drug. There are essentially three methods used for the biological assay of members of the digitalis series. These are the toxic method, using different animals and estimating the minimum lethal dose; 2d. A method of using the frog's heart either perfused or simply exposed to determine the time of systolic standstill, and 3d. The determination of the relative effects upon blood pressure of some of the higher animals. From their experimental work Edmunds and Hale conclude that methods which employ as a standard the minimum lethal dose obtained upon the higher animals are not applicable to the physiological assay of the digitalis series. And, furthermore, an action upon the circulation should be taken as a standard of comparison rather than an action upon the nervous system. The frog methods were found by them to be the best. They recommend that the different manufacturing houses agree upon a single method of assay which would tend to insure that different preparations upon the market of the same character shall have the same potency.

Although a determination of the comparative activity of different preparations of digitalis now found in commerce was not a primary object of the research, Edmunds and Hale examined

nine different preparations, and the following list shows their results in the order named, beginning with the most active, as, 1st. Mulford's tincture digitol, 1; Burroughs Wellcome's concentrated tincture, 1; Nelson Baker's fluid extract, 1½; Hance Bros. and White's fluid extract, 2; Parke, Davis's fluid extract, 2; Merrell's normal tincture, 2½; Sharpe and Dohme's fluid extract, 3; Lloyd Bros. specific medicine, 4; Digitalone, Parke, Davis, 4. It will therefore be seen that variations of as much as 400 per cent. may be expected at times in different specimens of liquid digitalis preparations, and this can be corrected only by the adoption of a fixed, uniform method of biological assay.

Strophanthus, the chief substitute for digitalis, has acquired considerable prominence of late years, since Thoms isolated the crystallized alkaloidal glucoside, strophanthin. Last year a clinical study of crystalline strophanthin was published by Bailey in the *Journal of Pharmacology and Experimental Therapeutics*. He concluded that crystalline strophanthin is a valuable cardiac stimulant when compensation is broken from any cardiac disease; that the drug should only be used in emergencies, being unsuited for continuous use, and, in this respect, inferior to digitalis. He advises its use intramuscularly or intravenously, dissolved in salt solution, in the proportion of 1/4000 for the former and 1/6000 for the latter use. Bailey advises that the daily doses given at one time as a rule shall not exceed ½ mg. in twenty-four hours.

It is generally agreed that strophanthus, contrary to digitalis, does not increase the blood pressure. Recent work by Straub, published in *Therapeutische Monatshefte*, tends to confirm this view. He found that after lowering the blood pressure by different means affecting the splanchic area, such as arsenic poisoning, high section of the cord, chloroform narcosis, etc., the administration of strophanthus failed to raise the pressure. After fall in blood pressure, due to hemorrhage, strophanthus injections were followed by a rise, but such rise occurs without strophanthus and is not due to the drug.

Blood-Pressure-Lowering Drugs. Hypotensive Medication.—There is great need in medicine at present for some non-toxic drug which will lower blood pressure, like the nitrite series, and be less ephemeral in its action. Such a substance has not been proclaimed, but the work of Reid Hunt upon certain choline de-

rivatives is suggestive in this regard. Hunt found, in 1899, that the fall of blood pressure, caused by the injection of suprarenal extract from which the epinephrin had been removed, was due in part to choline.

It has been found that extracts of various organs cause a fall of blood pressure after injection into the circulation. Hunt has examined the relation between the toxicity and chemical constitution of a number of derivatives of choline. The relation between secretin and choline has been lately emphasized, and the activity of secretin may be due to choline compounds. Some of the compounds made and experimented with by Hunt were extraordinarily active and yet not very toxic. .00000001 gram of acetyl-choline, for example, produced a fall in blood pressure.

The methyl-cholines were found by Hunt to be the least toxic. No practical deductions can as yet be drawn from these interesting researches of Hunt, but they undoubtedly open up a field for investigation which is full of promise.

The general principle of reducing the blood pressure in cases of internal hemorrhage, advocated by me in a paper read before this Society last year, has found some advocates. Gaultier believes that a temporary and, of course, relative increase in the blood pressure always precedes typhoid hemorrhage. A careful record of the blood pressure in typhoid fever may constitute another means by which such accidents may be anticipated; other writers have maintained the same with regard to the blood pressure in tubercular hemoptysis. The drug proposed by Gaultier to effect a reduction of the blood pressure is mistletoe.

The Anesthetic Group.—The past year has fortunately seen the practical explosion of the curious therapeutic vagary known as the scopolamine-morphine combination for general anesthesia. Combinations of scopolamine and morphine with other drugs, often inert ones, such as cactin, are still advertised in the medical journals by manufacturers, but the wise physician is no longer charmed by their seductive claims. Hatcher (in the *Journal American Medical Association*, Feb. 5 and 12, 1910) has written recently upon this subject, and his conclusions are that, used alone, unsupported by other anesthetics, this drug combination is wholly unsuited; that as a preliminary to anesthetics it is not to be indiscriminately used because of rendering the problem of anesthesia somewhat more complicated. He says there are nu-

merous contraindications against its use in surgery and obstetrics, and that it is wholly unsuited to the latter, certainly as a routine procedure.

The production of general anesthesia by intracerebral injection of magnesium chloride, as suggested by Meltzer, has been tried out by Henderson, and a brief report of results published last year. The method is eminently satisfactory, but is only adapted for laboratory work upon animals.

Local Anesthetics.—The use of local anesthetics in the reduction of fractures and dislocations is a recent, and at present, of course, a slightly known application of these drugs.

No new cocaine substitute has appeared during the past year, but this is not to be regretted, as the number already at hand is so large that the combined work of the pharmacologist, clinician and surgeon has not completed their thorough investigation.

A brief review of the chief cocaine substitutes in use at the present time, with special reference to recent contributions concerning their action and use, may not be out of place here. The principal ones are alypin, anesthesin, betaeucaine, holocaine, novocaine, orthoform, tropacocaine and stovaine.

It will be seen by an examination of their formulae that all of the cocaine substitutes except holocaine are related to benzoic acid, each containing a benzoyl radicle. It is to be hoped that no new ones will be added until those which are known are thoroughly studied and their relative advantages and disadvantages determined. No absolute selection has as yet been made from this group. Alypin, stovaine, holocaine, novocaine and tropacocaine are equal in anesthetic power to cocaine. Novocaine, alypin, stovaine and tropacocaine are less toxic than cocaine, the others about equally toxic. Novocaine is least toxic of all. Alypin and betaeucaine do not dilate the pupil nor paralyze accommodation. Betaeucaine and alypin may be sterilized by boiling. Tropacocaine produces a rapid and lasting anesthesia, and is only half as toxic as cocaine. Novocaine, the least toxic of the group, produces satisfactory anesthesia, but it is not lasting unless adrenalin is added. Stovaine has come into great prominence lately as a local, and particularly as a subdural anesthetic, but no final decision has been reached. It is not entirely devoid of toxicity, by any means, as reported cases of death after arachnoid injection and one of local gangrene will testify. The

recent use of quinine as a local anesthetic will be briefly discussed hereafter.

The Newer Purgatives.—Phenolphthalein has still maintained the lead in this department during the past year and may remain fashionable for some time to come. It seems that even in such mundane matters as the intestinal function fashion may play a part. Since this substance first came into use as a purgative, about three years ago, almost every drug manufacturer in Christendom has exploited it under coined and fanciful names. It is needless to say that we should avoid these proprietary articles and use the original substance whenever it is considered necessary to employ the drug at all. The interesting feature of the action of phenolphthalein is that, though it is given in small doses like the vegetable purgatives, its effects are more like those of the saline purgatives.

Last year our interest in this drug was stimulated by the important work of Abel and Rowntree on the pharmacological action of some halogen derivatives of phenolphthalein, principally the tetrachlor derivative. These authors showed that phenol-tetrachlor-phthalein is non-irritant locally to mucous membranes and when injected hypodermically in oil solutions. The sodium and potassium salts are irritating. Its toxicity is low. When a solution of the tetrachlor derivative (4 grams) in oil is injected under the skin of dogs or of human beings a laxative action is induced which continues from four to six days. When the tetrachlor derivative is given subcutaneously it escapes from the body in the bile only. The mucosa of the large intestine reabsorbs the drug, becoming so saturated with it that it assumes a deep red color upon being moistened with solution of sodium hydroxide. The drug is a second time excreted in the bile and reabsorbed, a certain amount, of course, escaping in the feces. In this way the purgative action is kept up for several days.

It would appear from these investigations that some phthalein compound will probably furnish a serviceable hypodermic purgative. The impossibility of giving the sodium salt of phenoltetrachlor-phthalein hypodermically, on account of irritation and the slight solubility of the substance in oil, has interfered with the application of the drug to practice. Perhaps a suspension of it in some bland hydrocarbon oil may afford a means of administering the requisite amount. I have been pursuing a few experiments in this direction, but they are by no means complete.

Salicylic Acid and Quinine Compounds.—In the salicylic acid class we are always confronted with an abundance of riches. Sixteen members have already been admitted by the Council on Pharmacy and Chemistry of the American Medical Association to new and non-official remedies. It is not my intention to tire my auditors with any description of these drugs, since they have not been completely investigated. Perhaps we could actually dispense with them all without great loss.

A very recent addition to the class is diplosal, which is interesting, because it contains what at first sight seems impossible, 107 per cent. of salicylic acid. This apparent paradox is due to the chemical constitution of the drug. It is a salicylate of salicyl, so that it really contains more salicylic acid than if it were all made up of salicylic acid. Aspirin has, however, acquired the chief prominence in drugs of this class. It is said to liberate salicylic acid slowly and to produce little local and systemic undesirable effects. How far these claims are true can only be determined in the future. Novaspirin has recently been suggested as a substitute for aspirin. It is methylene-citryl salicylic acid, and is scarcely soluble in water. This latter quality is supposed to insure its passage through the stomach for the most part undecomposed. No definite opinion can as yet be given of this drug.

The Quinine Substitutes.—These have not been enriched during the past year by any new members, and it hardly seems necessary that the group should be enlarged. The only principle involved in making these substitutes is to mask the taste of the drug, and this has been accomplished in the three chief representatives of the class, aristochin, chinaphenin and euquinine. None of these substitutes has managed to displace the parent drug.

French, a surgeon in the British Army Medical Corps, has recently recommended quinine in syphilis, whenever the disease is accompanied with fever. Whether quinine kills the treponema pallidum or whether it acts on some associated infection is unknown, but the result of the treatment in such cases is, according to its author, quite marvelous.

The fact that a solution of quinine, such as hydrochloride of quinine and urea (used because soluble), when injected hypodermically or applied to mucous membranes exerts an anesthetic action similar to that of cocaine, was first published in 1907 by

Thebault, of Arkansas (*Jour. Ark. Med. Soc.*, Sept., 1907). Last year an important communication appeared upon the same subject by Hertzler, Brewster and Rogers (*Journal American Medical Association*, 1909, LIII, 1393). These authors claim that a one-per-cent. solution produces perfect anesthesia lasting 4 to 5 days. The anesthesia is more complete than that produced by cocaine. They noted a certain amount of thickening and induration, due, apparently, to cellular infiltration following the injections. Experimental investigations on rabbits showed that the thickening was not due to cellular infiltration but to a pure fibrinous exudate free from cells.

The amount of exudation depends on the strength of the solution, and with ¼ per cent. solutions only traces are found. The duration of anesthesia with 1 per cent. and ½ per cent. solutions was perfect for four or five days, and sensation was not restored after the ½ per cent. strength for ten days and after the 1 per cent. solution for two weeks. Salt solution as a solvent diminishes induration and lessens the duration of anesthesia. The authors claim that the method is safer than cocaine, that after-pains in wounds are avoided and that a hemostatic effect is produced.

Organic Arsenic Compounds.—Arsenic compounds have acquired great extension in their use during the past few years, and considerable literature has appeared upon the subject during the past year. The extension has continued to affect principally the so-called organic compounds of arsenic. Cacodylic acid or dimethylarsenic acid and its sodium compounds, sodium cacodylate and arrhenal, have been displaced by compounds of arsanilic acid. Arsanilic acid is derived from arsenic acid, $AsO(OH)_3$, by replacing one hydroxyl by aniline (phenylamine); related compounds are made by substituting derivatives of aniline. The chief ones in use are sodium arsanilate and arsacetin.

Sodium arsanilate is used principally in the form of the proprietary preparations atoxyl, soamin and orsudan. The arsenic from these compounds is liberated slowly in the system and they are therefore less toxic than inorganic arsenic. But toxic and even fatal effects are by no means unknown, particularly in very recent times since the use of organic arsenic has been extended to the treatment of trypanosomiasis and syphilis. Blindness from double optic atrophy has been reported in a large number of cases

usually following repeated doses of about 5 grams by hypodermic injection. For this reason the proclaimed innocuity of these compounds seen in advertisements must be viewed sceptically.

Basedow's disease has recently been treated by intravenous injections of arsenic and sodium iodide. Mendel, in *Therapie der Gegenwart* (1910, Heft 2, p. 61), reports ten cases greatly benefitted. He injects two cc. of the following solution, daily or every other day, until improvement is noted, then twice weekly, and, finally, once a week: ℞. Atoxyl, 1; sodium iodide, 4; distilled water, 20 cc.

Mercury Compounds.—The extension of the use of mercury to the treatment of tuberculosis in the past two years has again opened the question as to which is the best method of administering mercury by hypodermic injection. The answer is that there is no best method, and, just as in using tuberculin or any other very active agent, each physician must familiarize himself with some good method or, perhaps, a few good methods, and become expert in their use.

Several articles have appeared in the past year concerning the results of treating tuberculosis by mercury injections, but as the treatment is still in the experimental stage it will be impossible to give any definite opinion; on the whole, the results appear to be favorable, certainly as much so as those following tuberculin, and, as the method is safer than that by tuberculin, it is worthy of extensive adoption in order that its exact status may be established.

Of the different mercurial preparations the succinide has been most written upon during the year. The substance is the mercuric salt of succinic-acid-imide. It is said to be non-irritating and is used in 2.5 per cent. aqueous solution, of which from ½ to 1 cc. is injected daily. Personally I have found that the watery solution of biniodide of mercury, dissolved with equal weight of dry sodium iodide, is also unirritating provided the injection is made intramuscularly. This is true also of metallic mercury in the form of gray oil, and a further advantage of this method is that the injections may be given at intervals instead of being repeated daily.

Hexamethylenamine Compounds.—This substance is still extensively prescribed under the trade names aminoform, formin and urotropin. Two other related compounds have lately been added,

helmitol and saliformin. Frothingham has published a report showing that enormous doses of this drug may be administered to guinea pigs, but that after very large doses there may be gastric erosions.

I reported to this Society last March the discovery that hexamethylenamin is eliminated by the mucous membrane of the middle ear, and soon afterwards Dr. Mead Moore, of this Society, and I found the drug in the secretions from the frontal and other sinuses. Whether these facts will be of much practical importance, or not, remains to be seen.

A list of new drugs introduced during the past year, about twenty-five in number, is given by Rabow in a recent number of *Therapeutische Monatshefte* (1910, Heft 2, pp. 96 and 143), but after a careful analysis of them all, I do not believe there is one worthy to be brought to your attention.

In closing this rather desultory review, in which, I am sorry to say, nothing startlingly new has been offered, it may not be out of place to reiterate that, with respect to drugs, we should not be too precipitate in casting off the old to adopt the new. When Polonius warns Laertes, among other things, he says: "The friends thou hast and their adoption tried, grapple them to thy heart with hooks of steel, but do not dull thy palm with each new-hatched unfledged eomrade," and, by substituting the word drugs for friends in the quotation, we have the proper attitude to assume in that pharmaceutical deluge by which we are at present surrounded.

Dr. Lochboehler was surprised to hear of the discovery that caffein, instead of eliminating the depressing effects of acetanilid, actually increases them; he had always accepted the theory that the addition of caffein made acetanilid a comparatively safe drug; that this is not so is an important fact. He was surprised, also, to hear that heroin is not dependable and may give rise to unpleasant symptoms.

Dr. Randolph said that reference had been made to the experimental study of adrenalin; *a propos* of the method employed by Schultz to test the mydriatic effect of adrenalin on the eye of the frog, it has been proved that it is not reliable; Reid Hunt has shown that any albuminous animal extract will produce dilatation of the pupil in the frog.

He was glad to hear on one evening two papers which deprecate complexity of medical nomenclature and advocate simplicity.

This tendency to complexity had been well illustrated by Barton in the nomenclature of chloral derivatives; it has been shown that they all produce their hypnotic effect by virtue of the chlorine content of the molecule, and, therefore, the parent substance is best. He felt that all should be congratulated upon hearing the paper, and the essayist upon the attitude which he holds.

Dr. Roy thanked Dr. Barton for the paper; it had been interesting and complete. We should, by all means, be familiar with the chemical formulae of drugs, and particularly with the structure of the many new remedies offered; we should pay less attention to the fancy names. Attention to the chemical structure of remedies offered for the use of the profession will often show that they differ only in unimportant features from some familiar and much-used drugs, and also may serve to indicate that extravagant claims of their therapeutic efficacy may be discounted from the first.

The paper had omitted to state whether the experiments with adrenalin had been by stomach or by hypodermic administration. He suggested that although adrenalin may be split up in the digestive tract the radicles may come together again in the system somewhere.

Dr. Williams commended the paper for the soundness of many of the pharmacologic views expressed. He commented upon the fact that the review was rather of pharmacology than of therapeutics. He expressed the opinion that the benefits of a drug may be due to other causes than to recognizable chemical reactions *in vitro*; and we should not too quickly infer that because a drug will not do a thing in the laboratory it will not do it in the body. Schiedeberg, in 1890, wrote that quinine could not have any effect in curing malaria by direct action upon the malarial organism; but we know well that the drug actually does destroy the plasmodium. This illustrates the possibilities of other fallacies in experimental pharmacology, and we should not go too rapidly in saying that such a drug as adrenalin can have no effect when given by the stomach. The methods of administering mercurials intramuscularly interested him; he was sorry to say that after exhausting all the suggestions for painless injection of insoluble preparations he had been forced generally to use the soluble forms; the buttocks cease to tolerate the insoluble preparations. The paper was of great value and interest.

Dr. Gannon said that Dr. Barton's discovery that hexamethylentetramin is excreted in the middle ear had been availed of in the treatment of about a score of children with chronic ear infections of varying intensity at the Children's Clinic at Georgetown University Hospital, and all with good results. One child had had an offensive discharge from the ear for the space of a year; treatment by irrigations and hygienic measures had not ameliorated the condition; the exhibition of hexamethylenamin was followed very quickly by apparent cure.

Dr. Barton had but little to add to what had already been said. In reply to Dr. Randolph, it may be true that albuminous substances produce transient dilatation of the pupils of the frog, but Schultz's experiments had to do with less ephemeral mydriasis. He agreed with Dr. Roy that an understanding of the chemical structure of drugs will enable the physician to determine whether new remedies depart markedly from parent substances; it is not necessary to be familiar with the entire mode of construction, but merely of the general chemical makeup. As to the administration of adrenalin by the stomach, he has been guided in his opinion largely by the clinical reports, which are far from encouraging. He himself believes that the delicate amidopyrocatechin of adrenalin is destroyed in the process of absorption; and that is the consensus of opinion. The painfulness of mercurial injections depends much upon the individual susceptibility of subjects to painful impressions.

SCARLET FEVER.*

By M. F. THOMPSON, D. D. S., M. D.,

Washington, D. C.

Scarlet fever, which is and has been prevalent for quite a time in our community, and to such an extent that schools have closed in certain sections of the city to stop the spread of the disease as well as to disinfect the school rooms, is a disease more or less with us the year round, not alone with *us* but throughout the *world* and among *all races*. It should receive the consideration, from time to time, of this Society.

My prime idea in bringing this subject before you was to get the expression of the members relative to a few masked conditions existing in this malady.

Scarlatina, scarlet fever, scarlet rash, is an acute infectious, contagious, eruptive disease, presenting, in typical cases, the following features:

After an incubation of three to seven days there is a sudden onset of sore throat, vomiting and fever; within twenty-four hours after the appearance of these symptoms a characteristic eruption appears on the chest, arms and thighs, extending to

* Read before the Medical Society, May 22, 1910.

the back; very little appears on the face; exceptionally the face eruption follows and completely covers it. These symptoms continue, as a rule, three days, sometimes a week or ten days, the eruption fading in forty-eight hours.

Desquamation commences at the expiration of six days, continues from three to seven weeks, starting with the body and limbs, ending with the palms of hands and soles of feet. The prolonged scaling of hands and soles of feet is only of the primary layer of original skin, the accumulation of piled-up scales or epithelium. All authorities point to the scales being the source of infection, they holding the germ.

Beds on which patients have died from scarlet fever, when reoccupied, after having been long packed away, have often caused the disease in the new occupants.

The simple form was the one most met with during the last epidemic here; in fact, some of the cases were so mild one was almost ashamed to quarantine the patient; they varied from a slight eruption on the chest to all the symptoms enumerated, but the mortality and sequelae, as far as my observation went, were insignificant.

The malignant type has not presented itself very often; one fatal case only having occurred in my practice of twenty-six years. This death was in a boy thirteen years old, whose room had a crack from ceiling to floor through which the cold and snow of February penetrated; he was literally frozen to death. This was twenty years ago, and from that experience the fresh air and *warm room* go together.

The specific germ causing this particular disease has not been discovered, but undoubtedly the streptococcus plays an important part in the secondary symptoms.

The contagion is probably developed until the eruption appears, and from this time to the end of desquamation the disease can be carried by means of the epithelial scales which are shed by the patient and float in the room of the patient as a fine dust. While the streptococcus causes so many secondary symptoms it cannot be proven that it causes the disease, for these cocci are present in a very large per cent. of apparently healthy throats.

The diplococcus also is found in some scarlet-fever throats. Some authorities claim that the contagion in many cases of scarlet fever remains for a considerable period after the desqua-

mation; this may be true, but as soon as the last vestige of desquamation is gone the children are allowed to mingle with other children; observation has proven that few, if any, cases are contracted from scarlet fever patients after thorough peeling.

A very common cause of transmission of scarlet fever is carelessness on the part of the family after the physician in charge and the Deputy Health Officer have given instructions about caring for the patient. There is one house in particular in this city that is vacated and reoccupied at frequent intervals, and each time a new family with children moves in this house scarlet fever makes its appearance. The cause is very apparent when one visits the house. There have been at least ten cases in this house. The patients are allowed to run through every room, sleep in the various beds, look at books that are kept in the parlor—in fact, the whole house is filled with the contagious scales; when disinfection takes place the whole house cannot be disinfected, and the consequence is that one or more rooms remain contaminated, ready for the next family that comes; the mothers will reply, when told of their carelessness, "My children are not sick; I do not believe that it is scarlet fever at all; if I had known at first what I know now I would not have sent for a doctor; just keeping my children in the house for nothing!"

Many laymen think that the physician has some immunity from scarlet fever, or that he takes something to keep from having the disease; it has often made me wonder why the attending physicians do not spread it more than they do; to my knowledge it has not fallen to my lot to have infected anyone with this disease, although I admit my carelessness in this direction not many years ago. Lately I have been more careful. How many use due precaution?

Twenty years back it was my custom to visit the patient, go home, change clothing, and disinfect myself and clothing by remaining in a formalin closet about five minutes. If another case was encountered in an hour or two, home I went, and the same program was gone through; as time went on and more cases appeared, the time was taken up in doing very little besides disinfecting; it had to be stopped, and for a long time I "chanced" it. A very good scheme is to keep in the buggy or automobile for these cases a long, rubber army cape, reaching to the shoes, that can completely envelop one.

If we are attending a case of scarlet fever we should not attend an obstetrical case; this is true, but do we observe this precaution?

Do we scrupulously quarantine our cases, or do we half way make ourselves believe that the case is scarlet fever and turn our patient loose to spread the disease?

Some, in the past, have been very careless in making the diagnosis, and consequently numerous cases have been contracted from this neglect. I have on several occasions, when the case was marked by the lack of some symptoms, told the family that if they would keep the patient isolated the case would not be reported unless desquamation commenced by the eighteenth day; if this occurred on the day named the notice was sent to the health officer, and an explanatory note of the delay in reporting. If no desquamation by the twenty-third day the patient goes at liberty.

Are diphtheria and scarlet fever ever present in the same case at the same time? I have never seen such a condition.

A patient aged eleven had every symptom of diphtheria: fever, sore throat, membrane on tonsils, pharynx, uvula and soft palate; no eruption. Culture sent to health office; negative report. In twenty-four hours the child was covered with the characteristic rash, followed by strawberry tongue and desquamation; this case convinced me that the two diseases never exist simultaneously.

We often hear the mothers of our patients who have the fever, say, "Our neighbor's child had scarlet rash or scarlatina; its hands are peeling, but no scarlet fever;" and so our children are contaminated.

Age is a great predisposing factor; from one year to ten years being the most favorable age for its propagation, the extremely young being an exception. A baby at the mother's breast, nursing at regular intervals, escaped the disease while the mother was going through a typical case of the fever. The same mother, four months later had diphtheria, as verified by the health-office microscopic examination and my own observation, the child showing no symptom of the disease.

The sequelae are chronic sore throat, conjunctivitis, otorrhea, chronic diarrhea, subacute rheumatism, endocarditis, acute Bright's disease. Rheumatism and acute Bright's disease follow the fever more than any other disease, but on the whole patients

escape these results. Why are there so few deaths now as compared with thirty years ago; so few diseased eyes, ears and kidneys?

A *typical case* of scarlet fever is readily diagnosed. High fever, sore throat and pronounced scarlet rash on chest, thighs and arms should leave no doubt. How about when these pronounced symptoms are *absent* or several *do not appear?* Can a patient have scarlet fever twice?

Up to a certain time my opinion was, "Scarlet fever once only;" mothers were told that their children could not have the fever after having had it once. Numerous authors and writers claim that a mistaken diagnosis has been made when a second attack has been reported, but experience teaches us otherwise.

In January, 1908, a boy, aged six, had a severe attack of scarlet fever. All the symptoms were prominent and there was an eight weeks' desquamation period, with severe peeling. January, 1910, the same patient went through all the symptoms as in 1908, including the prolonged desquamation. I was so sure that he had the fever and the parents were so sure he had not (as all parents hope that the disease is not the dreaded fever), but admitted that he had symptoms similar to these two years previously, I told them to quarantine him for eighteen days, that I would not report the case unless desquamation started; this was done, and on the day named desquamation at the finger ends began. I wrote to the Health Officer, stating the conditions and my reasons for delaying my report. The deputy came, looked the child over, and saw the desquamation taking place on hands and feet. Several weeks intervened before the patient had entirely peeled. After the case was well the mother, who nursed the child, said that every symptom her son had in 1908 was repeated in 1910. This case convinced me that the disease can occur more than once in the same patient.

Can a patient have scarlet fever and no perceptible desquamation?

Our worthy President, Dr. Mackall, diagnosed a case of scarlet fever in a patient I was subsequently called on to treat, he being called on in the emergency. The case was reported immediately by him; the family becoming very indignant on having a card placed on the door and "no scarlet fever present." The rash and strawberry tongue, the latter being very slight, cleared up in a day or two, and from the beginning the child was not sick

at all. I had my doubts about scarlet fever. We watched the eighteenth day, and on until the twenty-third day, but no desquamation. I called on the Deputy Health Officer, related the conditions, and the placard was removed from the house. He asked me if it was a mistaken diagnosis; he was told to put it down as recovery; but I had the feeling that a mistaken diagnosis may have been made, as there was no desquamation. Dr. Mackall himself said to me one day, coming out of the flat, "We will make mistakes sometimes, won't we?" thus feeling that he had made a mistake in his diagnosis.

During the recent epidemic of scarlet fever, if an epidemic we can call it, my mind changed as to perceptible desquamation in exceptional cases.

One family had three boys, aged 7, 9 and 11, who had scarlet fever, with all the symptoms characteristic of the fever, all the boys in the same room and same bed; about the eighteenth day two began peeling, requiring about six weeks to completely shed all the scales, but the third boy was watched carefully and never, to the unaided eye, did desquamate at all, yet he was kept under observation until the other two brothers were ready to leave the room. This case convinced me beyond doubt that the child mentioned above as attended by Dr. Mackall had scarlet fever, and that the Doctor was correct in his diagnosis and I was wrong. I did not tarry long before the family of the patient was visited and told them that Dr. Mackall had made a correct diagnosis, that the child had scarlet fever. I now apologize for even thinking that Dr. Mackall was wrong. This imperceptible desquamation occurs in our scarlet-fever wards in Garfield Hospital, as I learned on inquiry a few days ago.

The eruption of this disease is very deceptive when seen at night, and not so well distinguished when a very vivid daylight is thrown on it; it is a good plan not to make a diagnosis at night, owing to this deception. A slight shading by the hand will show more clearly the eruption, with its fine, light, intervening spaces and scarlet petechiae.

The treatment of this disease has been a question in my mind, so few cases have gone wrong and yet so little medication. The medicinal portion, I must admit, was very insignificant, so little, indeed, that I often think that the patient would get along quite as well without as with drugs.

Our great aim should be to keep the patient's skin acting, kidneys secreting, insist on plenty of fresh air and a room not under 65 or over 70. Hot foot baths if the fever is high. Olive oil for itching; its application makes the scales heavy, so that they drop to the ground and do not float in the air.

The sheets which are placed over the doors do not do very much good unless they are placed double. The majority of families will allow a foot or more under the sheet.

Our shoes necessarily carry the particles from the room and scatter them outside; a good way to obviate this is to have a large blotter on a piece of tin or flat pan, the blotter being saturated with carbolic acid or lysol, so when we enter the room we tread on this mat; also when we depart the soles of the shoes can again be disinfected. For the small spots of skin remaining on the hands or feet of the patient use pumice stone and bichloride solution.

Light diet, plenty of milk, and the patient in a well ventilated room of moderate temperature, will generally bring the patient through safely, isolation and disinfection being imperative.

Dr. S. S. Adams said that the paper covered such a wide field that discussion must have rather indefinite limits; there could not be much difference of opinion about most of the facts presented. The best article upon scarlet fever, so far as he knew, would be found in Ziemssen's Cyclopedia of Medicine; there have been numerous other articles upon the disease since this appeared, but none so complete. The classification of the varieties of the disease given in the article mentioned is very complete and clear: *scarlatina sine eruptione*, *s. sine angina*, *s. sine desquamatione*, *s. simplex* and *s. maligna*. All these varieties may be met with, and the lightest forms may give rise by contagion to the most malignant. He had been antagonizing for many years the idea that in different varieties there may be a difference in the virulence of the scarlatinal poison; his belief is that differences in the severity of the disease arise entirely from differences in individual resistance to the infection. He had seen such wide variations in the type of the disease at the same time in the same family, all the way from doubtful cases to the most malignant, that he cannot escape the conclusion that something in the children themselves made the difference.

The differential diagnosis in obscure cases of scarlatina is very difficult, indeed, and there was an unusual number of such cases in the recent epidemic; he felt that there was little room to criticise any one for making mistakes. The statement had been

made that the cases in the recent epidemic were mild; he had seen all sorts. One child with a case of typical scarlatina had double mastoiditis, the lateral sinus on one side had to be opened; later the knee joint became infected and had to be opened; this child is now, fortunately, convalescent. The low mortality in Dr. Thompson's experience seemed to Dr. Adams quite unique; one death in a busy practice of twenty-six years made a far better record than he could claim. As to improvement in the proportion of sequelae and the death rate, that improvement has resulted from the abandonment of the old régime of sealed rooms and bad air is not a matter for wonder; the improved hygienic treatment of the disease has not only reduced the number of sequelae but their severity. As to the desquamation, that may occur three times; whatever the rationale of it may be, he knew that it was a very disagreeable fact.

Dr. D. O. Leech said that only one death from scarlet fever had occurred in his practice of twenty-three years, and he had had his share of cases of this disease. He had many cases last winter, with no deaths. He had had several cases in which there had been two attacks; one case had been complicated by diphtheria, the latter disease having been bacteriologically demonstrated. The treatment he orders for his cases of scarlet fever is simple, but had been very efficacious; the patient is placed in a well ventilated room, the temperature of which is kept between 65 and 70; the diet is milk; tincture of the chloride of iron and glycerin, equal parts, is given internally; the skin is kept soft with 5 per cent. carbolated vaseline, and the patient is kept in bed until a week after subsidence of fever. The number of doubtful cases last winter was very large. The only death in his experience occurred during a second attack, the reinfection having taken place nine months after the original scarlatina.

Dr. Chappell said that for many reasons it was desirable that there should be agreement on the essential points. He wished to say that his experience as to the mortality from scarlet fever had been even better, he thought, than that of several other speakers, for he had not had a death among children, from scarlet fever, during a long and reasonably extensive practice. He had lost one adult patient, a woman, who contracted the disease during her confinement. As to the mortality in general, in the statistics he had prepared several years ago it was shown that about one-half of the lessened mortality was due to municipal quarantine; the rest was due probably to improved methods of treatment. As to the mild, questionable cases, shall we quarantine them on suspicion and wait until the occurrence or absence of desquamation decides the question? It seemed to him that the proper course would be to report to the Health Office that the case was merely suspicious, not formally report the case as actually scarlet fever, but isolate the patient until the diagnosis be-

comes clear. In some of these cases there will not be desquamation, and the patient may be discharged without further formality. As to the necessary isolation, he believed that this disease can be controlled by proper quarantine within the home, if the affected child can be properly and early isolated; if this can be done, he has little fear that other children in the home, or elsewhere, will contract the disease. No hysteria is required in this matter. As a matter of fact the epithelium, especially when it is saturated with carbolized oil, is not so dangerous as some seem to think; there is decidedly more danger in the discharges from the nose and throat, and from the ears if they happen to be affected. Nor is there much danger of the physician conveying the disease if he takes the simple precaution of wearing a suitable outer garment into the sick room, and of disinfecting his hands on leaving.

Dr. Roy agreed with Dr. Adams, but he also agreed with those who hold that mild cases are due to attenuated virus; both factors, in his opinion, may be at work: in a single epidemic varying degrees of resistance will result in cases of varying severity; on the other hand, different epidemics may differ in severity on account of varying virulence of the infection.

He had had one death from scarlet fever in his almost thirty years of practice. He had no reason to think that he had ever carried the contagion from house to house. He rather inclined to think that the contagium resides in the secretions of the nose, mouth and throat.

Dr. J. D. Morgan was fully convinced that scarlet fever is not so severe now as in former years. In the scarlet-fever wards at Garfield Hospital scarlatina maligna is almost never seen. That nursing babes are immune is not true; only recently at Garfield Hospital a mother with a ten-day old child was brought in with scarlet fever; the baby was taken off the breast, and later it died of scarlet fever. Would it not be better to keep the baby on the breast milk, so as to give it the benefit of any antitoxic principles that might be present in the milk? Peeling is the great bugbear of this disease; some peeling will be found in 98 per cent. of the cases. Many of the cases of *S. sine desquamatione* are so called merely to cover a mistaken diagnosis. He thought the fumigating closet of Dr. Thompson useless; five minutes' exposure to such a formaldehyde atmosphere as would be bearable could accomplish no adequate disinfection. The gowns for physicians' use at Garfield Hospital are kept hanging in a closet in which a basin of formaldehyde is kept, and these gowns are almost unbearable to the wearer. The discharges from the nose and throat are more dangerous, in his opinion, than the desquamated skin. In the peelings of scarlet fever the streptococci and staphylococci with which the virus of scarlet fever is associated are never found. Second peelings are entirely harmless, and it is foolish to continue quarantine during a second desquamation.

Dr. Wood wished to call attention to a diagnostic feature of scarlet fever; routine examinations of the urine will nearly always show a rather large percentage of cases in which there is albumin. In the recent epidemic confusion with measles was a frequent mistake. An item of therapeutic interest is that desquamation may be expedited by rubbing the patient liberally with Russell's emulsion of mixed fats.

Dr. Acker said that the recent epidemic was mild. The diagnosis was often impossible until desquamation occurred. In the case of so-called second attacks of scarlet fever he thought that one of the attacks was not scarlet fever at all, but was probably a rash of gastro-intestinal origin. In the treatment of scarlet fever he does not use carbolized vaseline on the skin; he thinks that there may be danger of absorption of the phenol. He feels satisfied with the use of 10 per cent. icthyol ointment on the skin. The administration of hexamethylenamin does good. An interesting fact is that the cough of whooping cough is held in abeyance during an intercurrent attack of scarlet fever; the cough reappears afterwards; he had had two cases in which this was observed.

Dr. Lochboehler questioned the ethical propriety of the reference to Russell's emulsion appearing in the transactions. [The Society took no action.]

Dr. Woodward said that we do not know whether the desquamated epithelium is a source of danger or not, but the end of desquamation as marking the end of the infectivity of the patient has long been recognized, and this method of determining the proper time for removing quarantine may well be followed until some better plan can be found. The discharges from the nose and throat may be dangerous, but whether they are or are not more so than the desquamated skin has not been proven. It is a good plan, as has been advised by some writers, to caution the patient or other members of the family to observe a certain degree of personal quarantine after the official quarantine has been discontinued. Can scarlet fever and diphtheria co-exist? This question had been raised by the essayist. Personal experience had shown to Dr. Woodward's satisfaction that the two diseases may be concurrent. One thing of interest is the apparent comparative immunity of the colored race; this is very noticeable in the Health Office records and statistics. It is not known how much this may be due to difficulty of diagnosis among negroes. But the percentage of deaths to recorded cases is noticeably higher in colored persons, which is an argument in favor of the theory that the apparent immunity may in fact be due to failure to recognize mild cases of the disease among them.

Dr. J. D. Morgan asked Dr. Woodward if streptococci and staphylococci are not invariably present in the throats of scarlet fever patients? If that be so, and if, as had been pointed out,

these organisms are absent from the desquamated epithelium, would not these facts be sufficient to prove the danger of the throat discharges and the harmlessness of the peelings?

Dr. Woodward did not admit that the bacteria named were invariably present in the throat; moreover, the absence of these particular organisms would not be sufficient to assure him that the contagion of scarlet fever was absent, since they had not been shown to bear a causative relation to the disease.

Dr. G. Wythe Cook asked Dr. Woodward if the rash in the case under his treatment, supposed to have been coexistent diphtheria and scarlet fever, may not actually have been due to the administration of antitoxin?

Dr. Woodward replied that the diagnosis of diphtheria had been bacteriologically confirmed, and the scarlet fever was the primary disease.

Dr. Kinyoun said that many cases of sore throat not due to diphtheria were caused by the streptococcus or the staphylococcus; but they are not invariably present; the trouble may be due to the pneumococcus, the bacillus of influenza, Vincent's angina bacillus, etc. And in cultures from the throats of scarlet fever patients the latter organisms had on occasion been found, to the exclusion of the streptococci and staphylococci.

Dr. Jno. F. Anderson said that many cases of concurrent scarlet fever and diphtheria had come to his attention. During his residence at the Willard Parker Hospital he had repeatedly intubated scarlet fever patients for laryngeal diphtheria.

Dr. Chappell said that in his opinion the Health Office regulations should be based on the facts and the true nature of the disease, so as to avoid any unnecessary hardships; in this way more ready compliance with the law would also be secured.

Dr. Woodward said that the regulations of the Health Department had to consider first the protection of the public, and next the comfort of the individual. The cases in Dr. Chappell's mind may have been surrounded by conscientiously applied safeguards, without the intervention of the Health Office, but such is frequently not the case.

Dr. M. F. Thompson said that his rule was to quarantine all suspicious cases for at least eighteen days, whether he reported them to the Health Office or not. He had been much edified by writing his paper, if only by the discussion it had elicited.

MOTHER—Why should we make Willie a doctor when there are so many new doctors every year?

FATHER—But think of all the new ailments.—*Meggendorfer Blaetter.*

CASE OF VOLVULUS; RESECTION BY ASEPTIC BASTING-STITCH METHOD.*

By H. H. KERR, M. D.,

Washington, D. C.

C. L., age 41. Except for the diseases of childhood she was well until 1902, when she began to be troubled with constipation and swelling of the abdomen. Three months afterwards bowel obstruction occurred, and she was operated on at Columbia Hospital for Women, a new growth being removed from the upper part of the rectum and an anastomosis made by means of a Murphy button. She made a rapid recovery and had good health until 1908, when she again began to have colicky pains, constipation, indigestion and occasional vomiting. She was admitted to Freedmen's Hospital in January, 1910, and operated on for an obstructing carcinoma in the vicinity of the ileo-cecal valve. The lower part of the ileum, the cecum, ascending colon and part of the transverse colon were removed by Dr. E. A. Balloch, and an end-to-side anastomosis made between the ileum and transverse colon. She promptly and completely recovered.

May 18th following she was suddenly seized with sharp pain in the abdomen, followed by vomiting. Her bowels had not moved for twenty-four hours and repeated enemas were without effect. On the 20th she was readmitted to the hospital. Her pulse was 100, respiration, 30; temperature, 100; abdomen distended and tympanitic; general tenderness throughout; palpation failed to show any tumor. She vomited stercoraceous matter. A turpentine enema discharged some discolored fluid and gas. Diagnosis: obstruction of bowel from bands. At first she refused any operation, but the next day, as she was no better, she consented. On opening the abdomen some blood-stained fluid escaped and the distended bowel presented; general adhesions were found throughout, and a mass well down in the pelvis, that, on freeing the adhesions and removing the mass, was discovered to be a coil of gangrenous intestine, obstructed by volvulus. Two long, curved clamps were applied close together in the healthy bowel above the obstruction, and two below. The bowel was then divided between each pair of clamps, and the

* Reported to the Medical Society, May 25, 1910.

mesentery of the resected bowel was ligated with catgut and divided. The basting stitch was then introduced over each clamp which closed the two ends of the healthy gut. The clamps were removed from under the loops of the basting stitch, which was then tightly drawn, effectually inverting the cut edges. A simple anastomosis was now made with one continuous Lembert suture and the basting threads withdrawn. Gas and the bowel contents were milked through the anastomosis to demonstrate its patency. The bowel was returned to the abdomen and the abdomen closed. The volvulus was found to consist of about seventeen inches of intestine, and had evidently occurred around an old adhesion. The case is making an uneventful recovery.

Dr. Balloch said that if the woman whose case had been related by Dr. Kerr keeps losing bowel at the hands of surgeons she would soon be effectually short circuited; however, the necessity for the three resections, performed by Dr. Stone, by himself, and by Dr. Kerr, was quite apparent. He had not seen the technic of Drs. Parker and Kerr's basting stitch demonstrated clinically, but from the descriptions and pictures of it it appealed to Dr. Balloch as being simple, safe and clean.

Dr. Kerr appreciated Dr. Balloch's compliments. The basting-stitch method had been experimentally tried on a series of twenty-five dogs, and the preliminary report by Dr. Parker and himself had been based on these experiments. They hoped later to make a full report when more experience had been gained.

The Patient was Improving.—The following was told of the patient of a well known physician:

The patient, an elderly gentleman, became quite ill while the doctor was absent upon a holiday, the indisposition being the result of too frequent potations. A female nurse was at once engaged to care for him in his hotel.

A lady, residing in the same hotel, became aware of his illness, and interested herself to the extent of one morning inquiring concerning his condition of the chambermaid.

"Shure, ma'am," replied Maggie, "an' I think he do be gettin' along very well. The nurse was sittin' on his lap this mornin'!" —*Exchange.*

TUMORS OF THE LONG BONES.*

By WM. F. M. SOWERS, A. B., M. D.,

Washington, D. C.

The literature of sarcoma of the long pipe bones is quite voluminous, but of comparatively recent date. What has appeared in the last twenty-five or thirty years covers most of our accurate surgical knowledge of the subject, principally because of the development of aseptic surgery, cellular pathology and the x-ray during that time.

One of the earliest comprehensive papers was that of Dr. Gross in the *American Journal of Medical Sciences*, 1879. He reports 165 cases, collected mostly from scattered reports. He recognized trauma as an important etiological factor, that the femur, tibia and humerus were most commonly affected, and gives other interesting data as to clinical history. The operative mortality was high because of lack of antisepsis, and so the article is not very useful in throwing light on the relation that the histological picture of the tumor and the method of treatment bear to the end results. His remarks on the pathology are valuable; he found that 59 per cent. of the sarcomata of the long bones originated in the medulla, and emphasizes the importance of observing accurately the tint and consistency of a tumor, with the idea of differentiating between the very malignant and those less so. He recognized the giant-celled sarcoma as "generally central, circumscribed and isolated from the surrounding tissue by an investing capsule;" to the naked eye it appears "dark red or reddish brown or maroon color, often mottled." He described large and small spindle-celled sarcoma and round-celled sarcoma as a softer, very malignant kind; he described the very vascular ones as often containing blood cysts, and also called attention to those that contain gelatinous areas, myxomatous tissue, and those that are harder and less rapidly growing which contain bone and fibrous tissue. So he described an *osteoid* and *fibrous sarcoma* and a *myxomatous osteoid sarcoma*.

Next in order come the reports from some of the German clinics. Nasse, in 1889, collected twenty-five cases of malignant sarcoma in the long bones, observed in Von Bergmann's clinic

* Read before the Medical Society, May 11, 1910.

from 1874 to 1889. Cases from the same clinic between the years 1889 and 1898 were published by F. Koenig. Up to 1898 in this clinic there were forty-one cases of malignant sarcoma (the giant-celled sarcomata were not included in this series) which were treated by most radical amputation and exarticulation. Of these forty-one cases thirty had died of the disease, the majority of the deaths occurring within about a year after the operation from internal metastases. Nasse (*Arch. fuer Klin. Chir.*, 1887) called attention to the fact that all giant-celled sarcomata are not encapsulated, and the fact that when there is no limiting membrane or capsule of bone they are very malignant tumors. He also reported a case of the typical benign variety which he cured by simple curetting; and he made an important practical point when he said that in the post-operative microscopic examination of different parts of his benign giant-celled tumor he found in some parts of the tumor giant cells, in other parts round cells, and in still other parts sclerotic tissue. He realized a possible error in operative treatment if he had examined sections from one part of the tumor microscopically before operation and been guided by this rather than the gross, macroscopic picture found at operation.

Reinhart reported the results at Koenig's Clinic (Göttingen) from the years 1880 to 1895; 54 cases; the most common situation was the upper end of tibia and lower end of femur; the majority of the patients came to the clinic six months after the beginning of some symptoms which pointed to trouble in the bone. It is important to note that in 34 of the 54 cases, before a definite diagnosis was made an exploratory operation was performed. In the differential diagnosis tuberculosis of bone presented the greatest difficulties; and in six cases the diagnosis before operation was bone abscess (osteomyelitis). In all these 54 cases amputation was done, the site determined by the apparent malignancy or advancement of the growth; disarticulations at hip and shoulder-girdle amputation were done in certain cases. Four out of 54 died as the result of the operation. At the time the report was published four years had elapsed since 39 of the cases had been operated upon; of these 39, 7 were living and well. Local recurrence was rare, the majority of the cases dying of internal metastases, especially to the lungs.

Mikulicz, in 1895, published a paper (*Arch. fuer Klin. Chir.*)

on resection of sarcoma of the long bones. He found that he could persuade patients, in the early stages of the disease, before there was much pain, to submit to a resection of the bone when they would refuse an amputation; and thought that in early cases a resection was justifiable if amputation was refused, inasmuch as it was well known that the later an operation is performed for sarcoma of the long bones the greater the danger of internal metastases. He even advocated resection in all cases of malignant sarcoma of bone where the disease could be completely excised without injury to the great vessels of the limb or without removal of so much tissue that the result left a useless extremity. Some of his results were quite satisfactory, and he has some cases cured of the most malignant types of sarcoma by this method; they were apparently very early cases, and a very thorough resection was done, both periosteum and bone, and often adjacent soft parts being removed. His results, I think most surgeons agree, do not justify this method of treatment in the average case of one of the very malignant types of the disease. Three years later (in *Deutsch. Med. Wochenschrift*) there was an article by Weisinger which also showed the effort to get away from a radical amputation in every case; and discussed some of the difficulties in differentiating between benign and malignant tumors of the bone. He also reported successful cases of resection, even in some of the more malignant types of sarcoma, and recorded a case of benign enchondroma situated in the medulla of the femur, the patient fifty years of age, the chief symptom sciatica. He agreed that the microscopical examination of the tumor is not at all the best index to its character. We must judge from the clinical history and the growth and gross appearance of the tumor. In general, the more cellular and softer and more vascular the tumor the more malignant. As to the probability of early internal metastases in the malignant forms of sarcoma one is never able to judge. In tumors apparently of the same character metastases take place very early in some, later in others. The giant-celled form of sarcoma of the medulla of bone is the most benign, although giant cells may be present in very malignant tumors. If the tumor is circumscribed and has a definite bony shell this is an index of its benignity.

The cases of the Tuebingen Clinic (Prof. v. Bruns), observed between the years 1860 and 1903, were reported by O. Kocher;

65 cases in all, 9 of them well after three years. He also attempted to compile from the literature all the cured cases of sarcoma of the long bones. Counting his own 9 cases he found 57 cured cases; of these 30 were myelogenous, 15 periosteal, the remaining 12 not determined, showing, as most statistics do show, that in general the medullary sarcomata are more benign than those that spring from the periosteum. The operative procedure in these 57 cures was interesting: 21 cured by amputation; 10 by exarticulation; 17 by resection. It is to be noted here that nearly one-third of these cures, 17 cases, was effected by the conservative resection.

Kramer, 1902 (*Arch. fuer Klin. Chir.*), gives results of his own experience and considers the reports of all the other large clinics during the previous ten years. He lays stress on the difference in the malignancy of bone sarcomata, reports two of his own cases of giant-celled sarcoma cured by chisel and curette only. He tries to compare the results of resection and amputation, concludes that resection is justifiable in certain selected cases, that disarticulation is demanded in certain very malignant infiltrating tumors and that amputation is the rule in the majority of the cases. Jenkel, writing the same year and in the same journal, considers only sarcoma of the femur, and concludes that for tumors at the lower end of the femur exarticulation at the hip joint gives no better results than high femoral amputation; exarticulation is necessary only in sarcoma of the upper femoral shaft, or in cases with extensive muscle infiltration.

The cases of sarcoma of the long bones admitted to the Johns Hopkins Hospital from 1889 to 1902 were published by Dr. Bloodgood, 40 cases, but only 29 which have gone from three to ten years since operation. The author also emphasizes the difference in the malignancy of sarcoma of bone, and states that the disease has been cured by resection and low amputation in properly selected cases. He grouped the cases into giant-celled, medullary and periosteal sarcoma (the latter rare), all comparatively benign, all of them cured, except some in the earlier years of the clinic, by conservative operations; medullary myxochondro-sarcoma, apparently relatively benign; and periosteal osteosarcoma, with much new bone formation, a harder, slower-growing variety, and relatively benign. Spindle- and round-celled sarcomata, from the medulla or from the periosteum, are always of relatively high

malignancy, rapid growth, practically no new bone formation but extensive bone destruction, infiltration of soft parts, often pathological fractures. Excision should never be attempted unless one is fortunate enough to observe the disease in its very earliest period.

Certain of the angiosarcomas from the vessel walls (often called endotheliomata). This is apparently the most malignant form of bone sarcoma.

There are many other valuable papers, such as Dr. Wyeth's in 1901, one by Dr. McCosh a few years later, and a good many by Dr. Coley, all showing poor results, *i. e.*, low percentage of cures, though most radical operations were done as a routine. The review of the literature thus far has been limited rather to those reports which considered the relation between the pathology of the tumor, the method of operation and the end results. It serves to show that though bone sarcoma in a large proportion of the cases is a fatal disease, there is a difference in the relative malignancy of some of these tumors; that surgeons can cure many of the cases, which were formerly cured by radical amputations, by less mutilating operations. The very malignant sarcomas of the long bones can be put in a group by themselves, and described as very cellular, rapidly growing, infiltrating and metastasizing, which kill by internal metastases, no matter how radical an operation is done, provided it is done after these metastases have taken place. This group includes, roughly, the round-celled, spindle-celled, mixed round and spindle-celled, and those arising from the walls of blood- and lymph-vessels. Early diagnosis and radical operation give the only hope of cure, though in certain reported cases the combined toxines of streptococcus and prodigiosus of Dr. Coley have been useful.

The important thing, then, from the surgical standpoint, is to know which are the benigner forms of sarcoma and what truly benign tumors of bone have been and may be mistaken for malignant tumors; those that have been met with at operation and have been proven benign by conservative treatment and the results. Some of these have been mentioned in the preceding quotations from the literature. I have attempted to make a list of these tumors, without going into any great details except for the cystic forms, as I have a case to report which belongs to this latter group.

1st. The relatively benign sarcomas. Certainly the first recognized as relatively benign and treated conservatively to any extent by surgeons is the *giant-celled sarcoma*. Koenig is credited with having described these first as curable by curetting. Adami calls the medullary form the giant-celled myeloma; it is also called "tumeur a myeloplaxes" by Nèlaton; most common in young adults, rare before twenty years of age, and generally causes a fairly uniform, abrupt expansion of end of bone where it appears. I know of no case in the literature where it filled the entire medullary cavity. They are encapsulated tumors, but may break through the thin bony cortex; are curable by conservative operation, though will recur locally if not thoroughly removed; it may be necessary to do a subperiosteal resection. After local recurrence they may even be treated by conservative means and cured. They are to be strictly differentiated from the non-encapsulated, more malignant forms, which, though they may contain some giant cells, are generally of the round- or spindle-celled varieties. At operation, in the fresh state, they are very hemorrhagic and bright red in color, often mottled; the tumor tissue is quite friable, can readily be broken up into irregular pieces. Hemorrhage into the substance may occur; retrogressive changes are frequent, and so we may have liquefaction and cyst formation. Microscopically, a ground substance, containing round, spindle, or mixed cells, with a varying amount of connective tissue and numerous large multinucleated cells.

There are a few cases in the literature of periosteal giant-celled sarcoma of the long bones, and also a report of a few cases of multiple giant-celled tumors, involving simultaneously several of the long bones in the same individual.

A condition which should be recognized, but is not often treated surgically, is that which has been called *myelomatosis*, or *multiple myelomata*. Here are multiple growths in the bone marrow of many bones, commonest in ribs, skull and vertebral column; usually in individuals past middle life; appear as multiple individual growths in different bones of the body, in the shape of nodules or diffuse infiltrations of soft consistency; under the microscope resemble round-celled sarcoma or lymphosarcoma; never metastases or growths outside osseous system. A fatal disease; the presence of the Bence-Jones reaction, *i. e.*, albumose in urine, is a great diagnostic aid. So it is important to look for

this in the urine in any case of multiple tumors of the bones. A few of these cases have come to operation in the early stages of the disease when maybe only one tumor was apparent, and the condition recognized only after a microscopic examination, finding albumose in the urine or the appearance of other bone tumors.

We next come to a group of tumors (occurring in long bones) which include in their makeup nearly all the varieties in which the connective tissue or framework of the body appears; fibrous tissue, myxomatous tissue, cartilage, bone, and even fatty tumors reported as springing from bone and periosteum. Generally two or more of these tissues are represented in the same tumor. Many of these tumors are purely benign, such as enchondroma, osteoma or fibroma; but others are more cellular in places, and, instead of only adult forms of connective tissue being represented, we see some round and spindle cells, or embryonic connective tissue; and so we find described as benign tumors *osteoma*, *enchondroma*, *fibroma* (*periosteal* and *medullary*); also pure *myxoma* (rare tumors) and combinations, such as *osteo-fibroma*, *enchonfibroma*, etc. The sarcomata containing these adult types of connective tissue are, 1st, the *myxo-chondro-sarcoma* (most often in medulla of bone); they do metastasize but their growth is comparatively slow, they tend to remain encapsulated and metastasize late; 2d, *Osteo-sarcoma*, springing from the periosteum, of slow growth and fairly hard, on account of considerable amount of new bone formation; 3d, *Fibro-sarcoma*, that has been described as springing from the periosteum, and its relation to the very malignant pure spindle-celled sarcoma may be expressed in the dictum, "the more we see spindle cells show a tendency to produce fibroblasts and fibrous tissue the less malignant the tumor;" and 4th, *Myxo-sarcoma*.

The above names are all taken from the literature; they all represent cases which have been operated upon conservatively and cured. It is an important fact that those that are merely benign tumors, not sarcoma at all, such as the benign cartilage, or myxomatous tumor, will grow again if not entirely removed; and I have references to where this has occurred in both the chondroma and myxoma. This group of comparatively benign sarcomata of the long bones which contains one or more of the fully-developed types of connective tissue is not as common as the *medullary giant-celled sarcoma*.

The last group of tumors that I will refer to as occurring in the long bones is the *bone cysts.*

Cysts of bone. 1st, from parasites; echinococcus cysts need only be mentioned. 2d, dentigerous cysts, those developing from rudiments of teeth and occurring only in the jaws, and do not concern us. 3d, multiple cysts, some in the long bones, have been reported in connection with osteomalacia, also in osteitis deformans (Paget's disease). 4th, cysts developing as areas of softening in solid tumors; areas of degeneration and of hemorrhage, making a cystic condition not uncommon in sarcoma. Myxomatous areas often are considered cysts. 5th, simple cysts of the long bones.

Between these groups that I have numbered 4 and 5, that is, between cysts in degenerated sarcoma and the truly benign simple cysts, has been the difficulty in diagnosis and employment of proper operative procedures. At first the simple bone cysts were thought to be practically always due to the softening of a *rest* of embryonic cartilage. They tend to develop near the epiphyses of long bones, as Virchow pointed out in 1876, and in his cases and in many described since, portions of cartilage were found in the cyst wall. Others held that the cyst is produced by slight trauma, causing a hemorrhagic focus and the subsequent production of a cyst (D'Arcis). These cysts are also described by Beck as indicative of some disturbance of bone nutrition characterized by the production of a rarefying osteitis. The later literature, with numerous cases where no cartilage was found in the walls and no evidence of former hematoma from which the cyst developed, seems to prove conclusively that probably the majority of bone cysts should not be considered as true tumors (neoplasms) at all, but that they are rather formed in the course of a peculiar inflammatory condition, or at least a nutritional disturbance within the bone itself. Corson, in *Annals of Surgery*, reports a case which he believed due to typhoid organisms; the patient developed cyst two years after the fever; not proven. The bone cysts associated with this chronic inflammatory condition, which has been called by Von Recklinghausen *fibrous ostitis*, are characterized clinically by the following observations: bone cysts are most frequently observed during the growing age of an individual, nearly all under thirty years of age; the long bones are most frequently affected, especially the femur, tibia and humerus; trauma

seems to be a very important factor in etiology, just as it is in ordinary osteomyelitis. Statistics show the cases about evenly divided as to sex. The symptoms are pain, enlargement of the bone, impaired function, fracture on slight trauma; the fractures may unite and the disease continue. The parchment-like crepitation of Dupuytren, on pressure over thin cortical bone, is an important aid to diagnosis in many cases. The onset of symptoms dates back from several months to several years.

Pathologically, they generally develop in the medulla, near the end of the bone. We may find fibrous tissue growth in the medulla above and below the cyst, similar to the wall of the cyst; I have found only one case besides my own where the cyst involved the whole shaft of the bone; this case was reported by Sonnenburg; was a girl aged 12 years, and the entire shaft of the humerus was involved in a cystic cavity. With the x-ray it is practically impossible to tell if one is dealing with a cyst or a solid non-osseous growth in the medulla. The bone is expanded rather uniformly and the cortical bone forming the wall of the cyst is often much thinned; this is generally lined by a thin, smooth, fairly dense membrane, pinkish in color, firmly attached to the thin cortical bone. The contents of the cyst is generally a reddish or brownish fluid, of about the consistency of synovial fluid. The periosteum shows new bone production, which, however, does not keep pace with the extensive bone absorption going on internally. Under the microscope the liquid contents show practically no cellular elements, unless, as in my case, the cavity is filled with blood from a recent pathological fracture. The lining membrane is made up of fibrous tissue of various ages, in places regular granulation tissue with abundant fibroblasts, and blood vessels with definite walls. The cortical bone to which this membrane is attached shows marked atrophy, cancellous spaces are widened and filled with the young fibrous tissues growing in from the membrane. There are also giant cells, presumably osteoclasts, which often precede the invasion of the inflammatory tissue, and are responsible for the bone absorption. The treatment is curetting and packing; the cavity gradually fills with granulation tissue, and in the healed state the x-ray shows that bone is deposited later.

My case was a colored boy, age 18 years, a cook's apprentice, who was admitted to Freedmen's Hospital in October, 1908, with a fracture of left humerus. Family history unimportant. Pre-

vious history: No history or evidence of syphilis or tuberculosis; had been generally healthy, never any serious illness, only diseases of childhood, never typhoid.

Present illness: When admitted to hospital was in usual health and weight. Had suffered very little with the arm until it fractured, and he dated all his symptoms back only three weeks. Had noted a little swelling of left upper arm, some weakness and pain here when he pulled on the rope to run a dumb-waiter up and down; all of which he called rheumatism, and rubbed the arm with liniment. He was walking in the country the day previous to admission, when he stumbled and fell on his left side. The fall was not a hard one, and he expressed much surprise when he got up and found his arm broken.

Examination: Healthy-looking boy; well nourished and muscular; no signs of syphilis or tuberculosis; no abnormality found in any bone except the left humerus, where there was uniform enlargement of entire shaft and a fracture, with marked mobility, crepitus and pain about the middle. Blood examination: red cells, 5,108,000; leucocytes, 10,300. A stained specimen showed no unusual forms of cells, and the normal relative proportion. Urine clear, 1,015, acid, no sugar, no albumen and no albumose; microscopical examination unimportant. X-ray pictures were taken of both arms. Left humerus much enlarged, due to great thinning and expansion of the cortical bone; an extensive medullary growth is apparently responsible for this. I had never seen a cyst as extensive as this, and it did not occur to me from the x-ray that it was a cyst. The x-ray showed very well that the disease had at no point gone beyond the limits of the bone.

Confident that it was a medullary tumor of the more benign, non-infiltrating variety, we promised before operation not to amputate his arm. Two operations were done, the first soon after his admission, in which, with a tourniquet high up on the left shoulder, an incision was made along the outer side of the arm, periosteum stripped back and outer portion of bone shell removed, showing one continuous cystic cavity extending between the epiphyses, and filled with blood clot from the recent fracture. The lining membrane was thoroughly removed throughout with curette and gouge, and the muscles with the periosteum attached were allowed to fall in place and the incision closed. A second operation was done the following January (1909), seventeen

months ago, because I did not feel sure that I was not dealing with a fibro-spindle-celled sarcoma; nothing suggesting sarcoma more than at previous operation was found.

I have to thank Dr. Neate for the pathological sections, and Dr. Dunlop for the x-rays. I pass around the x-rays and microscopic sections of this case, and two smaller pictures taken from Dr. Corson's case reported in *Annals of Surgery*. The x-ray after operation shows slow new bone formation and fibrous union of the fracture. The boy is wearing a cast from shoulder to elbow and uses the arm to run an elevator. I am afraid it will be necessary to graft some bone.

In conclusion I would say, 1. Though less common than the malignant sarcomata of the long bones, one meets at operation certain more benign tumors, most of which can be included in the three groups mentioned, (*a*) giant-celled sarcomata, (*b*) those containing some of the adult types of connective tissue, (*c*) the cystic tumors.

2. Besides the clinical history of slow growth the gross appearance and consistency of these tumors at operation are important. Their tendency to remain encapsulated and not to break through bone and infiltrate soft parts; the finding of new bone in these growths, also cartilage, fibrous tissue, etc.; and the typical appearance of the giant-celled variety and the cysts; all make it possible to recognize these benigner forms.

3. Exploratory incision into the growth on the operating table, preferably with a tourniquet above, shutting off the blood current, is safer than excision of a piece of tumor for diagnosis some days or weeks previous to the operation. Familiarity with gross appearances of especially the benigner tumors makes it possible to avoid cutting into growths until time of operation. A frozen section of the tumor at operation is often an important help, but may deceive in that such a small area of the tumor is examined.

4. Early operation is to be desired in all forms of bone tumors; in the case of the very malignant sarcomas, so as to anticipate the formation of internal metastases, as most of these cases die of internal metastases which have already taken place before the amputation is done, there being no recurrence in the stump. In the case of the more benign forms early operation is to be desired, before the tumors have progressed too far for the conservative operations, such as resection and curetting, to leave a useful limb (the extensive bone destruction in my case illustrates this.)

5. The x-ray is an additional aid, differentiating between relative malignancy of bone tumors before operation, but has its limitations. The x-ray will show bone destruction, the extent of the tumor, whether or not it has broken through the bone and is infiltrating, and any favorable new bone formation. It is not of much help in diagnosis between the cystic condition and a solid growth which does not contain bone (as in my case) ; nor is it possible in some cases to differentiate by x-ray certain forms of osteomyelitis and tumor.

Dr. Borden said that Dr. Sowers had presented a most interesting and valuable paper. The subject is always of interest and from three points of view : diagnosis, prognosis and treatment. Sarcomata run through all grades of malignancy, and, therefore, the necessity for making an exact diagnosis becomes apparent. Dr. Sowers had spoken of myelosarcoma as being the least malignant type of the disease ; some pathologists do not regard this neoplasm as being sarcoma at all, since recurrence does not take place after removal of these tumors. The sarcomata made up of embryonal cells are the most malignant. The duration of sarcomata may be for months or years. A fatal issue is earlier in the embryonal types. It is not always easy to diagnose the sarcomatous nature of tumors, but it can be done by careful consideration of such diagnostic criteria as the history, the radiograph, and section of the mass. The x-ray findings will always be a most important link in the evidence. The less malignant varieties usually show a shadow with definite outline and not much evidence of infiltration of neighboring tissues. In the differential diagnosis of bone tumors it is sometimes difficult to say whether the condition present is sarcoma or bone syphilis. In such cases the Wassermann reaction will be of value, but, in addition, the radiograph in bone syphilis will usually show a condition of eburnation of the bone, a density of bone quite at variance with the eaten-out appearance of sarcoma.

With reference to treatment he agreed with Dr. Sowers in the opinion that in the less malignant varieties direct attack is the proper operative procedure, but in the more malignant types high amputation is the only hope. It is sometimes proper to operate, and even to do rather radical operation, in essentially inoperable cases when pain is shortening life or is making it unbearable. The tumor will inevitably recur, but meanwhile the patient may die comfortably from some internal metastasis. An early operation of some sort should be done in every case of sarcoma of the bones ; there should never be any delay for tentative measures. The x-ray and Coley's serum should never be used until the operative possibilities have been exhausted. At present

surgeons are almost unanimously of the opinion that Coley's serum is worthless and dangerous because of inducing delay in operative measures.

Dr. Jack had seen the patient whose case Dr. Sowers had described and was surprised to see the good results which followed the operation. He believed with Dr. Sowers that it is best to use conservative measures in sarcomata of the less malignant sort.

Dr. Sowers thanked the speakers for their remarks, but did not wish to add anything to the discussion.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, May 11, 1910.—The President, Dr. Louis Mackall, presided ; about 46 members present.

The Chair announced the death of Drs. H. H. Barker and Wm. B. French, and appointed the following committees to report memorial resolutions: For Dr. Barker—G. Wythe Cook, *Chairman ;* G. C. Ober, W. M. Sprigg. For Dr. French—N. B. Barnes, *Chairman ;* Louis K. Beatty, D. Olin Leech.

Dr. Lumsden, U. S. Public Health and Marine Hospital Service, reported a case of Continued Fever of Obscure Causation, simulating Brill's Disease. Discussed by Drs. Chappell, S. S. Adams and Lumsden. See p. 335.

Dr. Atkinson presented a specimen of Papilloma of the Uvula.

Dr. Randolph reported a case of Suppurating Retroperitoneal Glands in Typhoid Fever, simulating Perforation.

Dr. Jack reported a case of Removal of the Upper Extremity for Sarcoma, and presented the specimen. Discussed by Drs. Borden, Sowers and Jack. See p. 333.

Dr. W. F. M. Sowers read the essay for the evening. Title : "Sarcoma of the Long Bones, especially the less Malignant Varieties," with report of cases. Discussed by Drs. Borden, Jack and Sowers.

Wednesday, May 18.—The President, Dr. Mackall, presided ; about 55 members present.

Dr. D. S. Lamb presented specimens as follows: (1) Sago Spleen; (2) Amebic Dysentery, Ulcers of Colon ; (3) Stricture of Ileum, probably from syphilitic ulcer.

Dr. T. C. Smith asked what would be the differential diagnostic points by which a syphilitic stricture could be distinguished from a malignant one at autopsy ; the microscope would, of

course, be decisive, but his question referred to gross appearances.

Dr. D. S. Lamb said that in a stricture due to malignant disease one would expect to see evidences of a tumor, with ulceration and subsequent cicatrization; it could not be said definitely that the specimen was syphilitic, but it was presumably so. There was no history at hand of the illness of the person from whom the specimen was obtained.

Dr. C. S. White read a paper on the "So-called Automobile Fractures." Discussed by Drs. W. P. Carr, Frank Leech, Lemon, J. D. Morgan, Jenner and C. S. White. See p. 329.

Dr. Barton read a "Review of Therapeutics." Discussed by Drs. Lochboehler, Randolph, Roy, Williams, Gannon and Barton. See p. 341.

Wednesday, May 25.—The President, Dr. Mackall, presided; about 60 members present.

Dr. Chas. S. Butler, U. S. Navy, was elected a member by invitation.

Dr. Vaughan reported a case of Acute Hematogenous Nephritis with multiple septic infarcts. Discussed by Drs. J. D. Morgan, Kinyoun, Chappell and Vaughan.

Dr. Borden reported a case of Lipoma of unusual size. Discussed by Dr. T. C. Smith.

Dr. Borden said that his apology for presenting a case of such a simple nature was the very unusual size of such a tumor at the present day. The patient was a white man 77 years old; the tumor had been growing for seventeen years, and the patient came to the George Washington University Hospital for relief, because the mass had become burdensome and had begun to affect his general health. The only question of surgical interest attached to the removal of such a large tumor was one of shock, but there was no shock at all. The only complication was a little post-operative oozing; Dr. Borden had to turn out a hematoma containing about three ounces of blood. The weight of the lipoma was 16¾ pounds. Convalescence was uneventful and the subsequent health of the patient was much improved.

Dr. T. C. Smith said that Dr. Borden's case brought up some very agreeable recollections. About seventy-five years ago Halley's comet was visible in the heavens and attracted the attention of all mankind. Years ago in the Medical Society surface tumors were the style, and there were great displays of lipomas, fibromas and the like. There have been none since the giant wart, brought from Freedmen's Hospital by Williams years ago. All at once the surface tumors disappeared and were replaced by a long procession of ovarian cysts; after the cysts uterine fibroids of varying size were lugged in for inspection, until we all got tired of

them. Meanwhile the comet had been traveling around its orbit and is once more visible to the inhabitants of the earth. Now, could he expect that the pathological styles have been changing in some set, periodic way, and that when the fall session of the Society comes around we will be entertained by a fresh outbreak of surface tumors?

Dr. H. H. Kerr reported a case of Volvulus, with resection of bowel and the use of an original method of suture. Discussed by Drs. Balloch and Kerr.

Drs. Ober and G. Wythe Cook presented resolutions of respect to the memory of Dr. H. H. Barker. See ANNALS, July, 1910, p. 302.

Dr. M. F. Thompson read the paper for the evening. Subject: "Scarlet Fever." Discussed by Drs. S. S. Adams, D. O. Leech, Chappell, Roy, J. D. Morgan, Wood, Acker, Lochboehler, Woodward, G. W. Cook, Kinyoun, J. F. Anderson and Thompson.

The Society adjourned, to resume regular meetings on the first Wednesday of October.

Stated Meeting, July 4.—The Vice President, Dr. P. S. Roy, presided; 16 members present.

Dr. McLaughlin, for the Committee on Building Fund for the George Washington Memorial Hall, made an informal report of the progress of the work of the committee.

Dr. C. W. Richardson read a report, with certain recommendations, from the Executive Committee.

In accordance with a recommendation from the Executive Committee, the Corresponding Secretary was authorized to communicate with members by invitation and ascertain whether they desire to have the program cards sent to them regularly, in order that the labor and expense of sending said cards to those who do not desire them may be avoided.

In accordance with a recommendation of the Executive Committee, the Editorial Committee was instructed to include in the ANNALS no matter not a part of the transactions of the Society unless paid for by the contributor.

On motion of Dr. H. L. E. Johnson, the Editorial Committee was authorized to regulate the amount of alterations of proof allowable to contributors, and to charge to contributors the extra expense of alterations over and above that allowable in the judgment of the committee.

An appropriation of $179.57 was made for publication of the July number of the ANNALS.

Dr. D. S. Lamb reported that on account of the removal of the establishment of R. Beresford, printer, it had been necessary to store the surplus copies of the History of the Society elsewhere,

and that, by courtesy of the Librarian of the Surgeon General's Library, he had been permitted to store them in his room at the Medical Museum until the Society provided otherwise.

On motion, Dr. D. S. Lamb was authorized to send out 500 circulars descriptive of the History to Libraries throughout the country.

On motion of Dr. J. D. Morgan, the Executive Committee was requested to report to the Society as soon as possible upon the feasibility of securing such alterations of the charter of the Society as may be necessary to allow of the consolidation of the Medical Association and the Medical Society.

The following candidates for active membership were proposed and their applications referred to the Board of Censors:

Eva Charlotte Reid, Cornell University Med. School, 1907.
Meade R. Edmunds, George Washington University, 1906.
John Constass, Georgetown University, 1904.
Percy Musgrave, Harvard Medical School, 1898.
J. Rosier Biggs, George Washington University, 1907.
Thos. Chas. Martin, Cleveland College of Physicians and Surgeons, 1897.

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EDITORIAL COMMITTEE.

D. S. LAMB, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W.
BENJ. G. POOL, M. D., . . . 945 Rhode Island Avenue, N. W.
PRENTISS WILLSON, M. D., ... The Toronto.

Editorial.

AT THE STATED MEETING OF THE SOCIETY July 4th, on recommendation of the Executive Committee, and in view of the present state of the Society exchequer, it was ordered that the Editorial Committee should include in the ANNALS no matter not a part of the transactions of the Society, unless paid for by the contributor. This action, it will be observed, compels the Committee to omit some editorial matter and the Medical Miscellany.

THE CASE REPORTED TO THE SOCIETY May 11th by Dr. B. M. Randolph, under the title "Suppuration of Retroperitoneal Glands in Typhoid Fever, Simulating Perforation," was published in the *Old Dominion Journal of Medicine and Surgery* for July, page 41.

THE ATTENTION OF THE MEMBERS of the Society is invited to the advertisement of Parke, Davis & Co., in this number, in regard to antidiphtheritic serum and globulins.

We regret to have to announce the death of Dr. J. W. BULKLEY. He died on the 23d of August. He was born Dec. 12, 1824, and was therefore in his 86th year. He became a member of the Medical Society Dec. 12, 1864, which was therefore his 40th birthday. Of late years he has rarely attended the meetings of the Society.

PAMPHLETS RECEIVED.

F. C. Smith, "Relation of Climate to Treatment of Pulmonary Tuberculosis," Bull. 35, P. H. and M. H. S., 1910; also, "Tuberculosis, its Nature and Prevention," Bull. 36, P. H. and M. H. S., 1910.

Mitzmain, M. B., "General Observations on the Bionomics of the Rodent and Human Fleas," Bull. 38, P. H. and M. H. S., 1910.

W. S. Gibson, "Topography of the Hypophysis;" reprint.

G. D. Scott, "Changes produced in the Kidneys by Experimental Ligation of Ureter;" reprint.

S. W. Ranson, "Architectural Relations of the Afferent Elements entering into the Formation of the Spinal Nerves;" also, "Results of Drug Treatment in 500 Cases of Delirium Tremens;" also, "Preliminary Note on the Non-medullated Nerve Fibers in the Spinal Nerves;" also, "Transplantation of the Spinal Ganglion into the Brain;" reprints.

C. A. Herter, "Action of Sodium Benzoate and Benzoic Acid in the Human Organism," May 10, 1910.

G. W. McCoy, "Evidence of Plague Infection among Ground Squirrels," P. H. and M. H. S., 1910.

Fritz Hartel, "Technic of Venous Anesthesia;" reprint.

M. Metzenbaum, "The Professional Anesthetist;" also, "Nasal and Pharyngeal Obstructions in Infants and Children;" reprints.

J. F. Anderson and W. H. Frost, "Studies on Anaphylaxis, with Special Reference to the Antibodies Concerned," Bull. 64, P. H. and M. H. S., June, 1910.

Worth Hale, "The Bleaching of Flour and the Effect of Nitrites on certain Medicinal Substances," Bull. 68, P. H. and M. H. S., June, 1910.

F. C. Walsh, formerly of Washington, D. C., now San Antonio, Texas, "Pyuria in Latent Genito-Urinary Lesions;" also, "Venereal Diseases and Marriage;" also, "Prostatic Calculi;" reprints.

Edmond Souchon, "The Souchon Museum of Anatomy at Tulane University of Louisiana, New Orleans;" also, "A Plea for a Reform in Medical Education;" reprints.

W. R. Brinckerhoff and A. C. Reinecke, "Studies upon Leprosy;" also, J. Y. Wayson and A. C. Reinecke, "A Palliative Treatment for Leprous Rhinitis," Public Health Bulletin No. 33, U. S. P. H. and M. H. S., 1910.

University of Virginia Record.

L. L. Lumsden, "What the Mayor and City Council can do in the Prevention of Typhoid Fever," P. H. and M. H. S., 1910.

Transactions of Sixth Annual Conference of State and Territorial Health Officers with U. S. P. H. and M. H. S., Washington, June 2, 1909.

L. E. Cofer, "Maritime Quarantine," Bull. P. H. and M. H. S., No. 34, 1910.

C. W. Stiles, "The Sanitary Privy, its Purpose and Construction," Bull. U. S. P. H. and M. H. S., No. 37, 1910.

Wm. A. White, "Schema for a Standard Minimum Examination of Mental Cases, for Use in Hospitals for the Insane;" reprint.

J. F. Anderson, "The Influence of Age and Temperature on the Potency of Diphtheria Antitoxin." W. H. Frost, "An Organism isolated from Water, Agglutinated by the Serum of

Typhoid Fever Patients." Norman Roberts, "Some considerations on Colorimetry and a new Colorimeter;" also, "A Gas Generator in Four Forms for Laboratory and Technical Use," Hygienic Laboratory, U. S. P. H. and M. H. S., Bull. No. 60, June, 1910.

University of Colorado Medical Bulletin, June, 1910.

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WASHINGTON MEDICAL ANNALS

THE NON-SURGICAL TREATMENT OF CANCER.*

By ISABEL HASLUP LAMB, M. D.,

Washington, D. C.

The treatment of cancer by any means, surgical or otherwise, is a most discouraging field in which to enter, and at its gate we must still give to the surgeon the majority of cures, if there ever was a cured cancer.

The non-surgical treatment, therefore, would seem to find its best use as supplemental to the surgeon's work ; this is especially true of the Roentgen ray and radium.

It is the general practitioner who is most keenly appreciative of non-surgical means of combating this disease, for after his brother the surgeon has done his best and failed, the urgent plea for relief from pain and distress is made to the family doctor, who is at his wits' end and, like the patient, ready to use any suggestion likely to be of even transient benefit.

Non-surgical treatment, then, is usually applied to post-operative, more or less hopeless cases, in some instances to cases which will not submit to operative intervention of any sort ; its results, then, when summed up, are very like the surgical efforts in finality. For, until we know the causes, bacteriologic, embryologic and cytologic, of the various forms of new growth, we are at sea, and a starless sea at that.

Nearly every civilized country has its research-study foundation, society or school for the special study of the problem of the etiology and treatment of cancer. From none of these have we so far received definite help. The cancer Congress at Berlin, in 1905, showed some progress in the cytology of cancer, but it has

* Read before the Medical Society, October 12, 1910.

been the individual workers who have contributed most to our knowledge. As yet we are empirical.

Of the various means that are used for the relief or cure of cancer we have, following the days of the exorcist, the various pastes, then Chian turpentine and soap solution, Doyen's serum, Coley's fluid, papain, thyroid, thymus, trypsin, Roentgen ray and radium. Some of these are used with the idea of curing a local condition: the pastes, papain, pepsin, Roentgen ray and radium. Under the theory of infection come Doyen's serum and Coley's fluid, and possibly Roentgen ray and radium might fall under this head, since their ability to destroy cell life is manifest. Under the theory of faulty or degenerate metabolism are thyroid, thymus, trypsin and an array of fluorescent drugs, quinine, iron, arsenic and mercury.

Very lately experiments have been made with a serum from new growths along the lines followed by Wright, an autogenous serum, from the use of which quite a number of successful cases in the Philippines have been reported along the lines of serum investigation.

In February, 1910, Eugene Hodenpyl reported the use of the fluids of a chylous ascites from a recovered case of carcinoma. This patient had had abdominal tumors which were microscopically shown to be multiple carcinomata, from which she recovered. Hodenpyl then used the ascitic fluid from this patient upon 47 other cases, all of which were much improved; 26 showed no return of tumor after four years.

A recovery from carcinoma is so rare as to make this case worthy of notice, yet the serums so far have offered no certainty, and such serum as this would be so rarely obtainable as to eliminate it from the list of probabilities.

Carcinomas of the skin, that is, the epitheliomata, are classified by Bulkley and Janeway as baso-cellular or spino-cellular, according as they originate from the deep or the more superficial layers of the skin.

From the various studies upon the blood of cancer patients it has been found that the alkalinity of the blood serum is markedly increased in carcinoma, not so much in sarcoma; this is argued as only a favoring, not a causative, factor in the etiology. Injections of blood serum of cancer patients into normal individuals produces a characteristic hemolysis in 100 per cent. of cases, ac-

cording to Crile, while other workers obtain such hemolysis much less often. There however seemed to be a pretty constant reaction, while Elsberg, working at Mt. Sinai Hospital, finds also a very characteristic reaction resulting from injections of washed normal human blood cells into cancer patients; this reaction, he claims, is not found in other infectious granulomata.

As a means of early diagnosis these blood studies are valuable and are the beginning of work on the cytology of cancer.

Of the pastes there seems little to say; their best use seems to be upon ulcerated warts or moles, some few naevi and the small cutaneous tubercular growths. The field of usefulness for these and pure carbolic acid is limited.

Papain or papayotin has been used with fairly good results; it has a digestive effect upon depraved cells. As a topical application it has been used for many years in tropical and subtropical countries where the plant grows. The method followed by C. W. Branch and others is to inject into the new growth an emulsion of $\frac{1}{8}$ to $\frac{1}{4}$ grain of papain in distilled water. He reports five cases, all of which were much benefited (*West Indian Med. Jour.*, June 31, 1907). Injections every week or ten days.

The action of pepsin upon malignant cell growth is very slow, apparently inhibited by the alkalinity of the tissues; this, with other preparations of the enzymes of the alimentary tract, has been used as a local application for all chronic ulcerating and infective granulomata.

Very soon after the Roentgen discoveries the x-ray came into use as a therapeutic means of combating cancer. Its use in therapeusis was at first attended with some disasters, as burns, overstimulation, etc., because of entire lack of knowledge as to standardization of dosage, and indeed even at this day this is a matter of some difficulty, for only recently Benoist's penetrameter, Sabourand's pastille for gauging intensity, and the various filter devices and means of protecting surrounding parts have been evolved through much experience of defeat and danger in the application of this valuable aid to our armamentarium.

An immense amount of work has been done with the x-ray; its palliative effects make it eminently worth while even though no cures were recorded as its due. It has been found that each tube seems a separate therapeutic entity, and, depending on the kind of tube used and technic followed, results will vary. Gen-

erally a soft tube is used for length of dose, a hard one for penetration. A working knowledge of physics and acquired technic are points to be emphasized in x-ray work for cancer.

Very naturally the superficial growths are best suited for this treatment, and these, when possible, are to be removed surgically and rayed after the operation, so that all adjacent cancer cells may be destroyed before a second chance for their growth is given. Fifty per cent. of cures is claimed for the x-ray, that is, alone and combined with surgical means.

In the x-ray a differentiation as to character of growth to be treated seems necessary, for while the epitheliomas seem readily amenable, sarcomas appear to be stimulated to more virulent growth by its use, and are therefore not entirely suitable even after an operation. The tissues in order of susceptibility to x-ray influence are epithelial tumors of lymph glands, hair follicles, skin, muscle, connective tissue. Roentgen rays have been combined with the administration of thyroid. Here the exposure is prolonged, and a double-tube rectifier (Geyser's) and a filter are used. The thyroid used is a fluid preparation injected hypodermically. This fluid thyroid has been supplied by Eimer and Amend and is supposed to be freer from ingredients which cause circulatory symptoms.

Pusey's report of 111 cases of superficial malignant growths cured by x-ray ought to be very encouraging, as nearly all presented healthy scars after seven years. But here, as elsewhere, the advanced inoperable cases do not make so pleasing a picture.

Electricity in other forms has been applied to cancer alone or supplementally to surgical removal. The high-frequency fulguration, as it is called, used by de Keating-Hart and others, seems to have the best use as a finishing touch to surgical efforts. This seems akin to cauterizing and requires an anesthetic. It is best applied after surgical removal of the tumor and consists in the application to the operated area and surrounding tissue of a shower of sparks continued for several minutes from a high-frequency apparatus. It is very painful and seems not to have had much use in this country. The immediate post-operative application of x-ray offers a better, or certainly a less painful, method of securing the same result, that is, eradicating the remaining malignant cells.

Electro-chemical sterilization by means of cataphoresis, also

with high-frequency currents, has been of use in relieving pain and discharge and palliating the miseries of the hopeless ones.

When the effects of radium on living tissue were noticed, means of applying to therapeutic uses this wonderful discovery were soon devised, and we find its use on malignant growths made a few months after the Curies made their announcement.

Finzi (*Jour. Royal Soc. Med.*, Dec., 1909,) gives a short analysis of the physics of this substance, which belongs to the same group of elements as barium, strontium and calcium. Very recently it has been isolated pure by Madame Curie ; the bromide is the salt used therapeutically.

Radium bromide gives off three kinds of rays, designated as alpha, beta and gamma rays, each having very different properties. The alpha rays are small and have very little penetrating power ; they may be stopped by a sheet of paper or a few millimeters of atmosphere ; they are deflected only in a very intense magnetic field. Beta rays are like negative electrons, are variable in penetrating power ; some resemble the alpha, while others will go through three millimeters of lead ; they are strongly deflected by a magnet, but in the opposite direction to the alpha rays. Gamma rays are not particles, but ether vibrations of extreme penetrating power, are not deflected by the most intense magnetic field ; they have been compared to the x-rays, but as they do not affect a Sabourand pastille we have no means of comparing the penetrating powers of these two kinds of rays.

Radium itself gives off only alpha rays ; it is slowly and constantly being evaporated into a gas called the emanation, which also gives off only alpha rays and forms a deposit known as radium A. This also gives off alpha rays and changes into radium B, which gives off slow beta rays and itself slowly becomes radium C ; radium C gives off all three kinds of rays. The time required for these changes ranges from a few moments to 1,300 years ; the kinds useful in therapeutics are radium C, E and probably radium B.

The emanation, by its decomposition, forms all the products necessary for our use, but it would have to be collected for more than one month ; so that the substance is placed in a sealed tube, where its emanations, deposits and other chemical changes progress, and in a month's time the amount of radium C formed is

equal to that decomposing, and we get a radium of constant strength.

Of these rays the beta and gamma are of great therapeutic value; the beta for prolonged application, the gamma for penetration. Beta rays burn, gamma rays relieve pain; their proportion in a given amount of the salt is reckoned as 14 B to 1 G.

In application all the rays given off are not available; much absorption takes place in the walls of the container; it is found that aluminum obstructs the beta rays, but lets the greatest number of gamma rays through. Lead and tin are also used, and glass; for cleanliness of application rubber cots are placed over the tubes.

The matter of filters and shields has been worked out by Wickham and Domencini; these are used in deep work and for prolonged application. Tubes, rods and discs are forms of application; the rods and discs to large superficial growths. The radium is spread on these celluloid discs and covered with a specially prepared collodion. The period of application has been prolonged to 848 days. Since these rays are continuous, spontaneous and of even quality, the dosage would seem to be of much readier standardization than that of the x-ray.

Results are modified by other conditions; they are never so good after operation or caustics, so that, as in all other therapeutic means, the earlier their use is begun the better, and as in the roentgenization the periphery that is richest in proliferating cells should receive most attention.

The infection theory.—Jensen's experiment with mice is the one most often cited to prove the theory of infection in the study of cancer. Jensen placed a mouse suffering from cancer in a cage containing 100 healthy mice; every one of these developed cancer. Following Jensen other workers among mice have been able to demonstrate the infectiousness of mouse tumors, though all have not obtained such uniform results.

The *fungus* theory has been advanced, and animals have been injected with various fungous growths; infective granulomata occurred, but were readily healed.

In 1886 Doyen recorded the observation of certain mobile bodies in new growths which he called *B. neoformans;* from these he produced an antitoxic serum, using horses. This was elaborated and developed by several workers, but it was finally found that

B. neoformans was not an etiologic entity but the result of imperfect technic, so that Doyen's serum has proved illusory.

Coley's fluid has wider use and more definite application ; it is a mixture of *B. prodigiosus* and *Streptococcus erysipelatus*, and its use followed the discovery than an erysipelas developing upon a cancerous area apparently cured the cancer. This fluid has cures to its credit and the relief of symptoms also ; the results are not uniform.

Of Coca's serum there seems but little to say at present ; preliminary reports have been made and apparent success obtained.

Metabolic effects.—Extracts of thyroid have been used mainly because of the very marked effect on metabolism which this gland exercises. The use of fluid preparations of thyroid subcutaneously in conjunction with x-ray has been cited. Its users claim for it the invariable disappearance of cachexia and pain, and improvement in strength and nutrition.

Thyroid seems to contain substances which act as antibodies to cancer toxins and offer considerable obstruction to the absorption of cancer toxins by the lymphatic system. This, with relief from pain and improved nutrition, warrants its use in any case as an aid to other treatment.

Since malignant tumors of the thymus gland are practically unknown and none are recorded, and since cancer is a disease of adult life, a theory has been formulated that cancer cells are embryologic cells which have not been altered by thymus secretion during the time of its activity, are metabolic accidents, and this gland has been used as a remedy. Results are very like those of thyroid medication : improvement in nutrition and modification of pain. In its use full doses are given until a sort of toxemia is produced ; treatment is then suspended until recovery takes place and administration is begun again. Frederick Gwyer (*Annals of Surgery*, July, 1907,) says that the thymus should have part in all nonsurgical efforts to cure or benefit cancer cases, since it certainly modifies favorably the pain and nutrition and makes the end more comfortable.

The pancreatic enzymes.—In 1907, J. Beard, Prof. Comparative Embryology, University of Edinburgh, called cancer cells "irresponsible trophoblasts," and offered the theory that they are preembryologic germ cells, which have accidentally escaped elimination or rather chemical alteration by the developing pancreatic

secretion. These pre-embryologic structures are not somatic cells but represent the most degenerate attempt to reproduce or repeat the life cycle of the germ cell. These have their origin in the chorion, and when more highly organized are represented by monsters, like twins, teratomata, etc. Beard holds that chorio-epithelioma is the prototype of cancer, and further he recognizes no essential difference in the various forms of cancer, as carcinoma, sarcoma, epithelioma.

He says that there is no such thing as primary cancer of uterus, liver, stomach, etc., but that the trophoblasts happen to begin the attempt at life in such tissue, and the celltypes of the affected organ are reproduced by unconscious imitation.

In further support of the pancreatic secretion theory it has been argued that duodenal cancer is rare. Von Bergmann states that cancer of the stomach stops abruptly at the pylorus, so that the duodenum seems naturally immune. The small intestine is but infrequently the site of malignant growths, and when present cancer advances very slowly there, and also in the large intestines; from all of which it might be claimed that the pancreatic enzymes, bile salts and intestinal secretions have an inhibitory effect upon malignant growths.

The materials used are trypsin and amylopsin; these were worked out by the Fairchilds, and are the most effective and concentrated products of the kind offered for use. They are used subcutaneously, preferably in normal tissue near the new growth. At first injections were made into the growth, but better results were obtained by injection into normal tissue. The dosage is on an ascending scale, five minims of trypsin every other day; this is pushed until 40 minims are administered. The trypsin is usually kept up alone until the maximum dose is reached, when amylopsin is substituted. In some cases benefit is not obtained until the use of the amylopsin is begun. Its use seems to favor the absorption of the trypsin.

After a dose of any size there occurs a reaction, local and systemic; the growth is seen to be congested and hot to the touch. An hour or two after treatment there is usually a chill and some malaise; this wears off in a few hours and general improvement is noted.

Injections of trypsin are painful; amylopsin, except for the

usual discomfort of subcutaneous medication, causes no pain and produces no apparent reaction.

Wade's experiments on mouse tumors show that trypsin acts on the cancer albumin, destroying its ferment, so that in the two, trypsin and malignin, we have an antithesis of which trypsin is the more powerful. Cancer cells produce an intracellular acid ferment, malignic acid or cancroin, which is capable of dissolving all the tissues of the body ; this is neutralized by trypsin. Since trypsin disintegrates proteids, its prolonged administration may be detrimental, but this has not been demonstrated.

Trypsin has been used post-operatively in conjunction with the x-ray and following ineffectual paste treatment. Much benefit has certainly been conferred by its use ; improvement in nutrition, relief from pain, a more comfortable ending are results apparently of its use. As for other means a proportion of cures is reported.

Bainbridge has given the most accurate tabulation of results, though, as in all other nonsurgical therapeutic efforts, the results can never be exactly noted because of the kind of material used. Bainbridge thought that he got as good results from the injection of glycerine or sterile water, but some others have claimed as good results from the leucodescent lamp as have followed the use of the x-ray. Shaw-Mackenzie used soap solution and Chian turpentine in conjunction with trypsin, but the results were not uniform. Some have used, and it seems with good reason, subcutaneous injections of mercury, iron, arsenic or quinine near the new growths, thus affording some inhibition to round-cell infiltration, hoping by this means to accentuate the benefit derived from other treatment, as the x-ray or surgical intervention.

In conclusion, the personal equation counts here as elsewhere. One case will be benefited by the x-ray, another by trypsin ; another is helped by the use of electricity variously applied. No one therapeutic entity gives uniform results, and the sum total of our efforts is not encouraging.

Dr. Abbe had enjoyed Dr. Lamb's paper. He had unfortunately acquired the reputation of being a non-operative healer of cancers, because he chanced to have many inoperable cases of this disease to treat and relieve to what extent was possible by radium and the x-ray. Such being the majority of cases, the results naturally were not cures, but the fact remained that in

the x-ray and radium we have agencies which when properly used are valuable for relieving these patients and making life more endurable. In early epithelioma these x-ray and radium exposures were unquestionably curative, but in making this statement other methods of treatment are not thereby condemned. He was glad to hear that recent reports of the use of Hodenpyl's serum were favorable; last May, at the meeting of the American Surgical Association, nearly all the men who had sent cases to Hodenpyl for treatment were disappointed at the results. It seemed most encouraging to hear that 26 out of 47 cases had been apparently cured, and he hoped that the cures would turn out to be permanent. Coca's method of reinjecting autogenous cancer serum seemed a reasonable method of attack; but it may prove that cancer does not depend upon any infectious agent and that the disease will not react as true infections do to so-called antitoxic sera. Recent reports have been encouraging, but the technic for carrying out the method needs much improvement. A suggestion of much interest had been made to him by Dr. Neate, of the Army Medical Museum, viz: that the reaction against cancer was derived in some way from the subcutaneous fat, and was aroused by stimulation of the subcutaneous adipose layer; any agent that would produce proper stimulation of these tissues would do good in cancer. The idea was almost pure theory and needed to be worked out; but it was supported by the observation that in certain late operative cases of cancer, following the operation, there was gain in fat, and coincident with this gain an arrest of the disease.

Dr. H. D. Fry complimented the paper. One remedy not spoken of by Dr. Lamb was acetone, as advocated by Gelhorn, particularly for cancer of the uterus. By non-operative treatment of cancer we mean palliative treatment, and palliative treatment is directed to the ends of prolonging life, relieving pain and stopping discharge. These ends, except the relief of pain, were accomplished by the use of acetone in inoperable cancer of the uterus. The only hope for cancer was early operative intervention. He wished that Dr. Lamb had chosen as the title of her paper "The Treatment of Inoperable Cases of Cancer."

Dr. I. S. Stone had nothing to add to the subject of the paper proper; the essay had been an excellent review of the whole matter. Dr. Fry's statement that the only dependable cure for cancer lay in early operation had one exception: certain early and superficial epitheliomata were amenable to definite cure by radium exposures. Dr. Lamb's effort to bring all the alternative measures for the relief of cancer to our attention was a noble one, but he felt sure that she would not withhold the possibilities of surgical intervention from patients in whom cancer was early detected. It seemed to him that in inoperable cancer of the uterus, for prolongation of life and relief of pain and hemor-

rhage, there was nothing comparable to the electrocautery, and where this was not available the use of chloride of zinc.

Dr. Jack said that Dr. Lamb had given a full résumé of the possibilities of drug treatment for the relief of cancer, and it would appear that here we had another instance of the frequently observed fact that where so many remedies are offered none is of great value. He had seen as much good result from the injection of alcohol as from Coley's fluid. As far as the general practitioner is concerned his duty was to make a diagnosis as early as possible and send the patient to a surgeon. Dr. Stone's remarks upon the use of the electro-cautery were timely, and it might be well to add that when the electro-cautery was not available cautery irons made by a blacksmith and heated in a stove would answer every purpose very satisfactorily.

Dr. Mary Parsons had nothing to add to the admirable paper. She could not agree that surgery was a cure for cancer, nor that it was desirable to prolong the lives of the victims of cancer. She had had a number of cases operated upon after early diagnosis, careful and wide extirpation, but with the same fatal result that followed other efforts at cure. She had had one case of a woman who in 1880 had an epithelioma of the external angle of the eye ; this had been cured by the application of paste, though the cure was attended with great deformity. This woman recently died at the age of 90 with cancer of the stomach. The Alexander method for curing cancer by the injection of oils was exploited by a Boston firm ; she had tried it on one patient with bad results—wherever the injections were made a cancerous nodule seemed to develop.

Dr. Atkinson had had a case of epithelioma of the cheek, which had been early recognized, and the patient was operated upon by Dr. W. P. Carr ; a most thorough extirpation was made, including the glands of the neck. The disease returned before the operative wounds had entirely healed ; whereupon he tried the Alexander method mentioned by Dr. Parsons. He had the same experience ; cancerous nodules appeared wherever the injections were made. The patient finally died from hemorrhage, the ulceration invading one of the great vessels of the neck.

Dr. Lamb agreed with Dr. Fry that the non-surgical treatment of cancer might often be palliative treatment ; we meant by the term that the patient had already been operated upon and needed post-operative treatment, or that the case was inoperable, or that it was one of superficial epithelioma amenable to radium treatment. Operable cases should, of course, be sent to the surgeon ; the best results followed early operation, with subsequent x-ray treatment. The method of using trypsin was described ; in using this remedy a reaction would always be observed, but there was great variation in the tolerance. She had never produced a trypsin abscess. She had no cure to report as a result of the use

of this agent. It might not seem, as Dr. Parsons had suggested, desirable to prolong life, but after all, the physician's duty was to do what seemed possible.

DIGESTION IN FEVER. ABSTRACT.*

By JOHN BENJAMIN NICHOLS, M. D.,

Washington, D. C.

In view of the prevalent belief that digestion is very greatly impaired during fever, an analysis of published data as to the composition of food and feces in febrile cases was presented, in order to arrive at a precise estimate of the exact degree of lowering of digestion in fever. In 155 cases of nine different febrile diseases, covering a total of 1,386 days of observation, the general average digestion and absorption of the protein of the food was 86 per cent. In 31 cases of eight febrile diseases, 154 days of observation, the general average of digestion of fat was 89.6 per cent. These figures represent a falling off of only 5 to 10 per cent. as compared with the digestion of animal and mixed food in health, and are quite as good as in the normal digestion of vegetable food. This falling off is so small as for practical purposes to be quite negligible; any fear of fever patients being unable in general to digest and absorb an adequate quantity of the nutriment offered to them may be dismissed, and no reduction of the diet is necessitated on that ground.

Dr. Roy said that it had been a pleasure to hear the paper, and particularly because it advocated principles which he had long held and which he had for many years carried out in his practice. The tables presented by Dr. Nichols showed adequately that it was a fatal mistake to withhold food in fevers. The figures, as pointed out by Dr. Nichols, were inaccurate in that the feces always contain more nitrogen than can be accounted for by undigested food; but Dr. Nichols had not mentioned one source of this excess of nitrogen, namely, that derived from the waste products actually excreted by the glandular activities of the intestinal walls. That such excretion does take place has been proved by isolating loops of intestine in experimental animals, the loops at the time of tying being entirely empty; when later such loops were opened they were found to contain a mass of dark excrementitious matter, rich in nitrogen. It is interesting to see from Dr. Nichols' tables that good digestion is maintained in pneumonia.

* Read before the Medical Society, October 19, 1910.

Many physicians feed their cases of lobar pneumonia very scantily; this is fallacious, because if the mouth is kept in good condition these patients will develop an appetite, and the food ingested will be well cared for and helpful to the patient's general condition. In typhoid fever, on the other hand, the intestinal tract may be in such condition that the administration of anything other than the simplest foods may be inadvisable; but where these conditions do not obtain, then abundant food ought to be given. There was really nothing to add to Dr. Nichols' simple but complete paper.

Dr. Randolph had no doubt that the full tables prepared by Dr. Nichols would explain the point, but he wished to inquire if the figures given represented average percentages of food absorbed, or were the estimates made after the ingestion of a fixed diet? If, for instance, a fever patient absorbs 86 per cent. of 100 grams of food, will he absorb a greater or less proportion of 200 grams of the same food? It would be unsafe, it seemed to Dr. Randolph, to draw conclusions from the figures if they were derived from experiments in which different foods were given in varying quantities.

Dr. Kober said that observations made in Russian military hospitals had conclusively shown that high proteid diets were given in fevers with excellent absorption, the figures being quite up to those given by Dr. Nichols. Dr. Kober was personally glad to know that Dr. Nichols was among the first to point out the value of an abundant diet in typhoid fever. Dr. Kleinschmidt many years ago had practiced what he preached in his lectures on physiology, and gave food abundantly in febrile diseases with great success. Dr. Kober was pleased that Dr. Nichols had now given laboratory proof of the soundness of Kleinschmidt's ideas upon this subject. The figures of absorption are not quite up to the normal, and such a condition could hardly be expected with the decreased secretion of hydrochloric acid and pepsin in the gastric juice. Heretofore we have been derelict in keeping fever patients upon too restricted a diet, and this dereliction has been especially pronounced in the use of beef tea and beef extracts, which have been shown to be void of nutritive principles.

Dr. Williams said that Dr. Nichols had presented a valuable synthesis, and especially valuable in that it would provoke further study. He had taken exception to Pawlow's idea of the indigestibility of proteids taken without appetite; what Pawlow had actually stated, however, was that when food is taken by dogs without appetite there is an inhibition of the flow of gastric juice, but this inhibition is temporary; if, however, food is taken with disgust the inhibition becomes permanent. With respect to diet in fever it seemed to Dr. Williams dangerous to feed all fevers too freely in a feeling of security born of the knowledge of good absorption; danger may lie in defective metabolism. For

instance, we are aware that in many infective processes there is cloudy swelling, if not granular degeneration of liver cells; such a condition might easily give rise to errors or imperfections of metabolism, with the formation of pressor or depressor bodies. So also in many neurotic states attended with anorexia, it may be rather easy to excite an appetite, but the restoration of nutrition may be a much more difficult matter.

Dr. Frankland said that it seemed important to consider what proportion of the food value remained for actual utilization by the patient; what amount of energy is available after the digestion of the food has been accomplished? Pawlow states that milk is digested with the least waste of energy and, therefore, on a milk diet the balance of energy is to the advantage of the patient.

Dr. A. F. A. King said that no discussion of the dietary of fever patients is complete without a consideration of the quantity of water given. All fever patients are thirsty as a natural encouragement to drink. Water is one of the most valuable nutrients and diluents. He spoke of the beneficial results obtained by Drs. Edward F. Cushing and F. W. Clarke in Lakeside Hospital, Cleveland, Ohio, who gave to their typhoid cases 4 ounces of water every 15 minutes during waking hours, some cases taking without discomfort a gallon or gallon and a half daily. From April to October, 1904, they report 56 cases without a death. (Hosp. Report, 1905, page 7). It had always seemed to Dr. King that the method was founded on very rational considerations. Dr. Nichols should have taken into consideration the quantity of water administered; plenty of water will aid digestion and promote appetite. The paper was incomplete in this respect.

Dr. Nichols spoke of Dr. Roy's reference to the amount of metabolic nitrogen in feces; it is the consensus of opinion among investigators that the nitrogen of the feces derived from food residues is in very small quantity, that by far the greater portion of the nitrogen is excreted or derived from desquamated epithelium or from intestinal bacteria. There is no way, however, to determine the proportion in which these various factors contribute the nitrogen; the figures, therefore, as had been said, represent less digestive power for proteids than actually exists. As to Dr. Randolph's remarks, the figures given were derived from observations on all sorts and quantities of diets and represented the resulting averages; the diets may have been milk, milk and soup, or mixed diet. If we take typhoid fever as an example, a disease on which very many observations were made, it was found to be the rule that on a low proteid diet the digestion was less complete than in cases with increased nitrogen ingestion. There need be no fear that there will be less complete digestion with an ample diet. It may be said that the figures given represent averages derived from bad as well as mild cases. The tables include the

Russian work mentioned by Dr. Kober; indeed, most of the work of value on metabolism has been done by Russian investigators. It did not seem to Dr. Nichols advisable to enter upon a discussion of Pawlow's findings. The investigations had proceeded along entirely different lines. Pawlow's investigations were upon the psychic control of the secretion of the gastric juice. It had been shown, however, that in feeding with complete anorexia the digestion may be as complete as where there is abundant flow of gastric juice. It would appear that the quantity of gastric juice secreted may have little relation to the completeness of digestion after all the digestive apparatus has been employed. As to general metabolism, that is a step beyond the scope of the paper. Assimilation is difficult to demonstrate by objective methods; the figures given dealt with concrete demonstrable facts. There is a good deal of loose use of the word assimilation; and we are inclined to speak of cases in which the food is digested but not assimilated; as, for instance, in diabetes, where the carbohydrates are digested and absorbed, but quickly appear in urine as glucose; or in acid intoxication, where the toxic fatty acids accumulate because they cannot be properly utilized; or in albuminuria, with its proteid waste; in all these conditions the food substances may, in a way, be said to be passed out unassimilated. But in cases where measurement cannot be exact we are getting on unprofitable ground when we attempt to discuss them from the standpoint of food utilization. With respect to the energy required to digest various foods, this is another question in which accurate measurements cannot be employed. About 2,000 calories are required for the internal work of the body at rest, including digestion. The amount of energy used in gastric and intestinal movements must be a very small portion of the whole, and not at all comparable to the energy required for the heart action and respiratory movements. It seemed idle to speculate on the comparative energy required to digest various foods when we are unable to measure the amount required for the digestion of any one food. He was unaware of any investigations on which to base the idea that milk is particularly easy of digestion from the standpoint of energy required. Water is undoubtedly an important item in the dietary at all times, but it seemed to him that to drench the fever patient with large quantities of water in the manner suggested by Dr. King could hardly be acceptable to many practitioners; to depend upon water alone as a food would soon bring the patient to starvation.

"You look so pleased, where have you been?" "I've been visiting dentists' offices and had a lovely time; got a lot of new ideas for our college yell."

A REVIEW OF PEDIATRICS, WITH SPECIAL REFERENCE TO ACUTE INFECTIOUS PARALYSIS. ABSTRACT.*

By PRENTISS WILLSON, M. D.,

Washington, D. C.

The trend of current literature on the subject of infant feeding in emphasizing the importance of the encouragement of breast feeding was pointed out.

Reference was made to the eminently successful treatment of hemorrhagic disease of the new born, Melena neonatorum, by means of the subcutaneous injection of rabbit serum (Bigelow), of horse serum (Corpechot), of human serum (Welch), and by transfusion (Mosenthal). The ease with which human-blood serum can be obtained was pointed out and its obvious advantages over the other sera emphasized.

The very great importance of Dioxydiamidoarsenobenzol, the so-called "606," in the treatment of the congenital manifestations of syphilis, and, indeed, as a prophylactic in this condition, was considered, and reference made to Murphy's successful use of sodium cacodylate in the same class of cases.

The present status of the employment of Flexner's serum in the treatment of epidemic cerebro-spinal meningitis was briefly gone into. That this serum has been used with eminently satisfactory results in cases of meningococcic arthritis was pointed out. The injection should be directly into the joint after aspiration. Flexner's latest statistics, showing a mortality of 31.4 per cent. in a series of 712 collected cases, were given.

The greater portion of the paper dealt with the recent literature on the subject of acute poliomyelitis. The term suggested by Randolph, acute infectious paralysis, was accepted as fulfilling all the conditions to be met in more properly renaming this disease, and reference was made to Underwood's description of the disease in 1789, as also pointed out by Randolph. The experiments of Landsteiner and Popper, and those of Flexner and Lewis, definitely proving its infectious nature were referred to. The ultra-microscopic character of the virus, its extreme virulence, and its resistance to drying, glycerinization and freezing were mentioned. The finding by Dr. Allen J. Smith of appearances in the blood resembling trypanosomes was noted.

In regard to the subject of contagiousness, the position was taken that the question cannot in any sense be considered as settled, that it may be perfectly possible that the disease is not contagious but only inoculable, the factor responsible for the inoculation having so far escaped detection.

* Read before the Medical Society, October 26, 1910.

The papers by Straus and by Robertson and Chesley, reviewing the literature on pathology, were quoted. It was pointed out that the lesions in the organs generally are those of any acute infection.

In conclusion, the fact that our knowledge regarding the treatment had not kept pace with the advances in the knowledge of other aspects of the disease was pointed out, and it was prophesied that there would be no such advance until the factors determining infection are discovered, making possible an intelligent prophylactic treatment. Lacking this, a definite means of early diagnosis, associated with a specific serum therapy, is the only hope in arresting the disease.

Dr. Wall said that in dealing with the problem of acute poliomyelitis one should not too lightly dismiss the abortive type of cases. The last two cases which had come under his observation had paralysis of such slight degree as not to be observed at all during the acute stage of the disease. In one there was slight involvement of the deltoid ; in the other the tibialis anticus, the boy being brought to his attention on account of some slight alteration of gait. While these cases were not abortive, they were so slight as to make it appear that even less pronounced instances of the disease might easily occur.

Dr. Lochboehler spoke of the remarkable results achieved abroad by the use of Ehrlich's 606, and predicted great improvement in the treatment of hereditary syphilis by this new agent.

Dr. Frank Leech said that it seemed desirable to discuss the problem of the contagiousness of anterior poliomyelitis. He had seen instances of this disease every year since he had been a practitioner, and in only one case was there anything to give rise to a suspicion of contagion ; this child was a patient at Children's Hospital during last summer, with some digestive disorder ; it got well and was sent out. There had been two cases of infantile paralysis in the same ward with this child. A few days after its discharge it was brought back suffering with facial paralysis. This was the only case in the whole history of the institution in which the contagion was suspected. The disease is undoubtedly infectious, but that it is contagious in the ordinary sense seems very doubtful.

Dr. Dunlop said that the orthopedist's rôle in the treatment of poliomyelitis should not be lost sight of ; very much may be done for the preservation of means of locomotion and the avoidance of deformity by the use of proper orthopedic technic. But the time to secure results is to institute treatment very soon after the acute stage ; the time to prevent deforming contractures is before they occur: The use of proper apparatus at first, with tendon-section and transplantation later, may accomplish much.

Dr. Randolph said that one feature of the poliomyelitis problem of greatest importance is whether or not it is contagious. The

older authorities say that it is very slightly, if at all, contagious. But it appears very conclusively that it is an acute infectious disease, and that means that in some way it may be and probably is transmitted from one person afflicted with the disease to another susceptible to it. The tendency of municipal authorities is to treat it like other frankly contagious diseases, as scarlatina, measles, etc. We can here use terms readily susceptible of misunderstanding by the public; the public understands by contagion, contact; that if persons come near the disease they will acquire it and by virtue of propinquity. Reasoning by analogy we should attempt to secure some sort of isolation, and health authorities are justified in trying to prevent all chance communication of the infection from one patient to others. But it has by no means been proven that the disease is contagious in any ordinary way, and it is unscientific to conclude that it is transmitted in the same way as the better known infectious diseases. We made mistakes of this sort in our attitude toward malaria, and more notably yellow fever, and we ought to be cautious in going before the public with the statement that it is our dictum that the disease is contagious.

It had been his idea in advocating the name *acute infectious paralysis*, to which Dr. Willson had made flattering reference, to protest against the cumbersome names which have been brought forward embracing the anatomical distribution of the lesions; as the study of the pathology has advanced, more and more organs have been found to be involved, and as these discoveries were made the organs concerned were added to the name.

Dr. S. S. Adams congratulated Dr. Willson on the presentation of a clear, concise and up-to-date review. Dr. Adams cautioned against giving credence to much that may be seen in the literature; he spoke of an article in which a Western physician had reported a series of 500 cases of infantile diarrheal disease treated with wonderful results by the administration of raw, undiluted cow's milk. Dr. Adams looked up this man in a directory and his town in a gazetteer; he was a practitioner in a small town of 700 inhabitants, and the original paper, in one of its closing paragraphs, recommended the administration of some proprietary drug.

Much had already been said upon the subject of poliomyelitis. The question of the mode of transmission of the disease is as important as it is obscure. The terms infectious and contagious are synonymous, according to Welch, to whom Dr. Adams had appealed for a definition. As soon as we say that typhoid fever is contagious, no matter how we seek to guard our exact meaning, we spread alarm, and it is the same with poliomyelitis. How is the contagium transmitted? [Dr. Adams here gave illustrations of recent cases of his own knowledge which seemed to have arisen from imported infection brought by visiting relatives

from distant cities.] We should do all in our power to stop the spread of this disease, and until we know that such provisions are needless or ineffectual we should insist on the strict isolation of every case of poliomyelitis until the acute period is well over. Even the proper period of quarantine is unknown. He had never returned to the city with more misgivings than he had felt this fall. When all is said we still know very little about the disease. The only hope seems to lie in some specific treatment, which demands early recognition; and with our present diagnostic criteria this is impossible in sporadic cases, and diagnosis may only be guessed at in an epidemic until after paralysis has occurred. These considerations should not deter us from making every effort to advance the knowledge of the malady, and he would gladly place any material at his disposal in the hands of workers upon this problem.

Dr. Mary A. Parsons asked Dr. Adams if he could explain how, if poliomyelitis is contagious, so many cases are observed in which one child in a household acquires the disease and all the other children escape.

Dr. S. S. Adams said that he could only explain it on the ground of his experience with other diseases; he had frequently taken a child broken out with scarlet fever from a nursery full of children and had seen no other case develop in that family. On the other hand, he knew of a boy who had been isolated on a farm all summer, who went to the railway station on one single occasion, and a little later came down with poliomyelitis. It would appear that some brief contact while at the railway station was sufficient to transmit the infection.

Dr. Lemon said that the pathology of poliomyelitis is coming to be pretty well understood, but that the pathology of another interesting and fatal disease is still obscure; he referred to melena neonatorum. Is this a disease of the blood or of the blood vessels? The fact that a number of cures of this disease have been effected by the injection of normal blood serum would seem to indicate that the disease is dependent upon some deficiency in the blood itself. He asked Dr. Willson how much antidiphtheritic serum had been used in the case reviewed in which this serum had been used in default of human or rabbit serum.

Dr. Prentiss Willson replied to Dr. Lemon that the quantity of antidiphtheritic serum used in the case of melena neonatorum quoted had not been given in the case report. He himself had no doubt that cases of abortive poliomyelitis occur, and the article of Straus shows that such cases do occur, and that there may be areas of cord substance badly involved but with no consequent paralysis. But can we absolutely diagnose these cases? Is it scientific to say that because a child has been exposed to poliomyelitis and subsequently has some vague febrile disturbance he has, therefore, abortive poliomyelitis? As to the public's atti-

tude in this matter, he related a case in which a child, two months after the acute stage of the disease, was taken to the Naval Academy at Annapolis, and as soon as the facts became known was ordered from the grounds.

TWO CASES OF AINHUM. ABSTRACT.*

By TRUMAN ABBE, M. D.,

Washington, D. C.

Dr. Abbe presented two cases of Ainhum that he had cared for at Garfield Hospital Dispensary. He had watched the progress of the cases for two years, and showed photographs and skiagraphs of them, taken at the beginning and end of observation. One case, in a negress, a native of Maryland, was of sixteen years' duration, but only slightly advanced. The pain in the crack was, however, sufficient to induce her to have the toe amputated. The specimen showed the groove in the soft tissues and the slight atrophy of bone.

The other case, also in a negress, a native of Georgia who had lived fifteen years in this District, was of about twenty-five years' duration and much more marked than the other case; the groove around the toe was deepest on the plantar and inner margins of the toe and had penetrated almost to the toenail. The middle phalanx was practically gone; only the nail-bearing part of the ungual phalanx remained; the basal phalanx was atrophied about one-half. The advance of absorption of bone was quite plain in the skiagraphs. The skin of the feet and hands showed a scaly condition. As the toe had given but little pain the patient declined to have it amputated, and was therefore presented herself.

Dr. D. S. Lamb said that some years ago a case was reported to the Society by Dr. McCormick, and exhibited a specimen that had been sent to the Army Medical Museum from the Philippines.

Dr. A. B. Hooe said that Dr. James Kerr had had a case of ainhum in his surgical clinic at the Emergency Hospital in 1895 or 1896, and had demonstrated the case to his class.

Dr. Abbe said that Dr. Kerr's case, referred to by Dr. Hooe, had been published in the *Medical News*, Philadelphia, 1895, by Dr. Pyle.

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* Reported with cases to the Medical Society, October 12, 1910.

CASES OF INFANTILE SCURVY.*

By S. S. ADAMS, A. M., M. D.,

Washington, D. C.

Dr. Adams said that he had been asked, from time to time, to show to the Society cases of infantile scurvy when an opportunity should present. Such cases were more frequent than was ordinarily realized; babies with the disease in typical manifestation were brought to the Children's Hospital from time to time every year. The history usually showed that these babies had been treated for rheumatism; the differential diagnosis should be easily made, however, from the fact that rheumatism almost never occurs under two years of age, nor is there any tendency to hemorrhages in the disease. If scurvy be once seen and recognized, there should be no difficulty about the recognition of a second case. As to the etiology, in 1898 the American Pediatric Society had reports of 358 cases of infantile scurvy, studied from the standpoint of causation; in a few cases the disease developed during a dietary of cow's milk and other food, of nursing and other food and of nursing alone; but in 214 cases the disease was due to the exclusive feeding of proprietary foods, condensed milk or sterilized milk (high temperature).

[Two infants with the disease were exhibited to the members; the histories were read from the record at the Children's Hospital. The main symptoms in these babies were blood blisters over the incisor teeth; petechial eruption over the trunk, especially the chest; induration and great tendernesss over the epiphyses of the lower limbs, especially marked at the lower extremity of the femur. The little patients were rapidly getting well under appropriate treatment; indeed, he had been afraid that the manifestations might not last long enough to show to the Society. The patients had been put on a diet of equal parts of cow's milk and water; no orange juice at first. They would now be given teaspoonful doses of orange juice, increasing the dose by an additional teaspoonful daily. The babies would be well by the next Wednesday.]

Dr. W. G. Erving spoke upon the appearances presented in the radiographs taken by Dr. Dunlop of the femora of these babies. There was no question that a pathological condition existed at the lower extremities of the bones. The diaphyso-epiphyseal line was most markedly ragged, much more than was observed in rickets.

Dr. Dunlop said that he had only two days in which to do the work of making the pictures, and the children had moved so

* Reported to the Medical Society, October 26, 1910.

much that the task was difficult. The pathological condition, however, appeared very plain, and the pictures compared very well with those of Roche depicting the same condition.

Dr. Frank Leech said that the condition shown in the patients presented was interesting and typical. As had been said, the disease was easily recognized in advanced cases; but it was difficult and interesting to make the diagnosis in early manifestations of the disease. Within the past six weeks a child was placed in his care by a physician who had been attending the child during Dr. Leech's absence from the city. The diet had been modified raw cow's milk; there was pain in the hip and some limitation in movement; scurvy seemed excluded by the fact that the milk given had been raw; but a few days later a petechial eruption appeared and the gums became spongy. He then called up the dairy which supplied the so-called raw milk, and upon close questioning he found that the milk had been pasteurized. A change of diet to raw milk and orange juice produced a cure in ten days. This case showed how easily the medical attendant may be misled by the statements of well-intentioned but ill-informed parents. Most cases of scurvy arise, however, after an exclusive diet of condensed milk or the proprietary foods.

Dr. J. D. Morgan asked if the milk in Dr. Leech's case was used as it was delivered by the dairyman, or did the mother pasteurize it herself?

Dr. Leech said that the milk was used as delivered from one of the best dairies in the city and it was bought as and represented to be raw milk.

Dr. Kober asked Dr. Adams to speak of the most modern ideas of the relation between pasteurized milk and infantile scurvy.

Dr. Wall said that Dr. Leech's case ought to be put on record as a rarity, because properly pasteurized milk should cause no more scurvy than raw milk or breast milk. The collective investigation of the American Pediatric Society showed that malted milk leads as the producer of scurvy, and Eskay's food is a close second.

Dr. Woodward said that Dr. Leech's case should be of especial interest if the scurvy was actually produced by the pasteurization of the milk, because from 25 per cent. to 40 per cent. of the milk supply of Washington passes through pasteurizing apparatus before distribution.

Dr. Chappell said that he had recently seen one case of infantile scurvy; the child had taken pasteurized milk supplied by one of the most prominent milk firms of the city. The disease was present in its typical form and was unmistakable. The case was reported to the dairymen who supplied the milk, to their great consternation. This had been the only case in his practice; of course, he had seen many cases of malnutrition, but none other of scurvy. He asked Dr. Adams in what particular way orange

juice contributes to the cure of these cases, and whether the patients would do as well on raw milk without the orange juice.

Dr. Frank Leech said Dr. Wall had spoken of the harmlessness of properly pasteurized milk; we know, however, that sterilized milk does cause scurvy, and it seemed to him quite likely that much commercial pasteurized milk was improperly pasteurized; as a matter of fact, sterilized by over heating.

Dr. Woodward said that no evidence of over-pasteurization had appeared in the examination of milk samples at the Health Department; on the other hand, judging from the bacterial content of samples, much under-pasteurized milk was to be had in the local market.

Dr. J. D. Morgan said that, judging from his own experience, he felt sure that much of the milk sold here was over-pasteurized. He had been victimized by a milk dealer serving him with milk which had such a cooked taste as to be unpalatable.

Dr. S. S. Adams said that so far as the intimate etiology of scurvy is concerned he would be glad to find some competent authority to enlighten him on the subject. While the collective investigation before alluded to did not blame any one kind of food for the production of this disease, it was extremely significant that 214 cases had been fed on proprietary foods of one kind or another. He himself believed that commercially-pasteurized milk ought never be put into the stomach of an infant. While domestic pasteurization of milk was at times advisable, experience showed that scurvy sometimes developed with an exclusive diet of milk treated in this way. Raw milk, on the other hand, at once put an end to the trouble. The effect of orange juice in this disease was not entirely understood; but orange juice was merely convenient, other fruit juices would act as well. The potassium citrate may be the efficacious agent. The victims of infantile scurvy would get well on raw milk alone, but the fruit juices hastened recovery.

CASE OF "WANDERING," OR "PARASITIC" FIBRO-CYSTIC TUMOR OF THE UTERUS.*

By I. S. STONE, M. D.,

Washington, D. C.

Miss Mc., aged 55, was admitted to Columbia Hospital, Washington, October, 1910, with the following history: She had always been healthy, although not robust; except for the usual diseases of childhood and adolescence, had never had any severe illness. Her abdomen was greatly enlarged, but she had not

* Reported, with specimen, to the Medical Society, October 19, 1910.

suffered much pain or any kind of inconvenience. A diagnosis of ovarian tumor was made and operation done October 10th. After the trocar had evacuated more than a quart of fluid a growth was discovered the posterior portion of which was solid or semi-solid; no adhesions nor pedicle nor any attachment to either uterus or ovary. Comparatively slight pressure on the flanks caused the sudden expulsion of the the tumor. The only place of attachment found was a point near the right parovarium, or between the ovary and fimbriated extremity of the tube. This attachment did not contain large vessels such as are seen in pedicles, and needed neither ligature nor suture; the raw surfaces were closed with fine sutures, as usually done for the prevention of adhesions. The recovery of the patient was prompt and uneventful.

This tumor was evidently one of "parasitic" or "migratory" character, having its origin within the muscular wall of the uterus. Its solid portion was precisely similar to the typical uterine fibromyoma, and its microscopic examination confirmed this observation. The tumor had separated from its uterine attachment by torsion of its pedicle and strangulation of its vascular supply, which ultimately resulted in atrophy of the pedicle and its complete absorption.

Dr. T. C. Smith said that Dr. Stone had told him that he would present a specimen of tumor of the uterus, and then had told the Society that the tumor was not attached to the uterus. Dr. Smith inferred that the tumor had originally been a pedunculated tumor of the uterus, and had later become twisted off.

In Memoriam.

DR. JOHN WELLS BULKLEY.

During the past summer we were called upon to deplore the demise of one of our oldest and most esteemed members—Dr. John Wells Bulkley, who expired in this city on the twenty-third day of August, 1910.

Born in Massachusetts in the year 1824, he had attained the age of 86 years. He received his medical degree from the Berkshire Medical College in 1844.

During the early sixties, and for many years subsequent thereto, Dr. Bulkley was a loyal and devoted member of this Society,

participating enthusiastically in all its proceedings and activities. Of late years, owing to the conditions incident to advanced age, he had been with us less frequently.

During a long professional life Dr. Bulkley pursued "the even tenor of his way" as a judicious, skillful and conscientious practitioner of medicine. In evidence of our respect and esteem, be it therefore

Resolved, That we sincerely deplore the loss of our venerable and revered associate; that we honor his memory, and tender our earnest sympathy and condolence to his bereaved family.

Resolved, That the foregoing historical note and resolution be recorded in the minutes of the Society, and that a copy of the same be forwarded to the family of Dr. Bulkley as an expression of our kindly feeling and sympathy.*

(Signed) A. F. A. King,
Thomas C. Smith,
C. W. Franzoni,
Committee.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, October 5, 1910, at the G. W. U. Medical School Building.—The President, Dr. Louis Mackall, presided; about 90 members present.

The following candidates were elected to active membership:
Eva Charlotte Reid, Cornell University, 1907.
Meade R. Edmunds, George Washington University, 1906.
John Constas, Georgetown University, 1904.
Percy Musgrave, Harvard Medical School, 1898.
J. Rosier Biggs, George Washington University, 1907.
Thomas Charles Martin, Cleveland College of Phys. and Surg., 1897.

The Treasurer reported for the months of July, August and September: Receipts, $314.20; disbursements, $209.82.

The Chairman of the Executive Committee reported that on account of the sale of the building in which the Society formerly met, the committee had had to arrange for a meeting place; the

* The preamble and resolutions were adopted by the Medical Society at the meeting October 19, 1910.

use of the present room was by courtesy of the George Washington Medical School. The most advantageous arrangement had been to secure the use of a hall in the Masonic Temple, now used by the George Washington Law School; the cost would be $160.00 per annum ($20.00 per month for eight months) to the Masonic Hall Association for heat and elevator service; and $100.00 per annum to the Law School for light and janitor service. The Executive Committee recommended that this arrangement be accepted. The report and recommendation were adopted.

Dr. E. L. Morgan asked leave to reintroduce certain resolutions which had been offered by him and referred to committee in 1907, but upon which no report had been made. He read a memorial and offered a resolution: That the Society investigate the advisability of advocating the passage of such laws as may be necessary to secure the inspection, regulation and prevention of prostitution in the District of Columbia. Dr. Chappell wished it understood that as Chairman of the Public Health Committee he had done some work upon the subject presented to the committee by Dr. E. L. Morgan's resolution, and had sought to attain familiarity with the problems involved so as properly to direct the work of the committee—there had not been time to do anything definite when he was displaced as a member of the committee. He offered a substitute for Dr. Morgan's resolution: That the Committee on Public Health be authorized to consider the problems involved in what is known as the Social Evil, and to report not later than October, 1911, what, if any, action this Society should take looking to the regulation or prevention of prostitution in the District of Columbia. The substitute was adopted.

The thanks of the Society were given to the authorities of the George Washington Medical School for the use of the hall in which the meeting was held.

The Treasurer was authorized to take charge of the safe belonging to the Society and to secure a storage place for its safekeeping.

Colonel L. A. LaGarde addressed the Society upon the subject of "The Stopping Power of Pistols and Revolvers;" the address was illustrated by lantern slides. Discussed by Drs. Borden and LaGarde. A rising vote of thanks was given to Dr. LaGarde for the address.

Wednesday, October 12.—At the G. W. U. Law School room in the New Masonic Temple; about 80 members present. The President, Dr. Mackall, presided.

The resignation of Dr. J. D. Murray was accepted.

The Executive Committee was instructed to consider the propriety of suspending the publication of the WASHINGTON MEDICAL ANNALS until such time as the financial condition of the Society shall warrant its resumption.

Dr. G. Wythe Cook offered certain amendments to the charter

of the Society, which were referred to the Executive Committee for consideration and a report as early as possible.

The Chair announced the death of Dr. J. W. Bulkley, and appointed Drs. A. F. A. King, Thomas C. Smith and C. W. Franzoni a committee to prepare and report resolutions of respect to his memory.

Dr. Truman Abbe reported two cases of Ainhum, exhibited a specimen and presented a patient with the disease. Discussed by Drs. D. S. Lamb, A. B. Hooe and Abbe. See p. 408.

Dr. D. S. Lamb exhibited a specimen from a case of Ainhum.

Dr. Isabel Haslup Lamb read the essay for the evening. Subject: "The Non-Surgical Treatment of Cancer." Discussed by Drs. Abbe, H. D. Fry, I. S. Stone, Jack, Parsons, Atkinson and I. H. Lamb. See page 389.

Wednesday, October 19.—The President, Dr. Mackall, presided; about 60 members present.

Dr. A. F. A. King read resolutions of respect to the memory of Dr. J. W. Bulkley, which were adopted. See page 412.

The following were elected members by invitation: Dr. Geo. F. Freeman, U. S. Navy; Dr. Henry J. Nichols, Captain, U. S. Army; Dr. John S. Neate, Bacteriologist, Army Medical Museum.

Dr. I. S. Stone reported a case of Parasitic Fibrocystic Tumor of the Uterus, and presented the specimen. Discussed by Dr. T. C. Smith. See page 411.

Dr. D. S. Lamb presented the following specimens:

1. *Angiosarcoma* of the neck; removed by Dr. E. P. Magruder.
2. Trichina in muscle.

The first specimen was discussed by **Dr. Shands,** who said that Dr. Groover had secured a fine picture of the patient with the tumor *in situ.* The patient was a negro man, about 28 years old. The tumor had been slowly growing for eight or ten years. It seemed to proceed from the parotid or submaxillary gland; it was not at first thought to be malignant because it was soft, suggesting a cystic mass, and it had not noticeably impaired the man's health. The operation would not have been attempted had the suspicion of malignancy been entertained. The ear was on the outside of the tumor and the external auditory canal was about seven inches long. The patient died soon after the operation, apparently from the loss of blood and the effects of the anesthetic. There was no autopsy.

Dr. Lamb said that the microscopical examination was made by Dr. J. S. Neate of the Army Medical Museum.

Dr. J. B. Nichols read the paper for the evening. Subject: "Digestion in Fever." Discussed by Drs. Roy, Randolph, Kober, Williams, Frankland, A. F. A. King and Nichols. See page 400.

Wednesday, October 26.—In the absence of the President and both Vice Presidents, Dr. G. Wythe Cook, presided; about 80 members present.

Dr. D. S. Lamb, from the Editorial Committee, said that in view of certain statements made at a recent meeting he thought it desirable to correct what otherwise would be incorrect views.

First, in regard to the cost of publishing the ANNALS: Some members seemed to be of the opinion that the cost had been excessive; but the Treasurer's books showed that the *net* cost for the eight years ending Dec. 1, 1909, was $626.66 per year. At the outset of publication the Medical Society directed that the expense should not be over $600 a year. But since the membership of the Society had increased, until now it was about 50 per cent. greater than in 1902, it was only natural that the cost of publication should also increase, and $626 a year did not seem to be out of proportion.

Another statement had been made that the best papers that had been read before the Society had not been published in the ANNALS; had been published elsewhere. Of the papers read from January 1, 1902, to May 31, 1910; that is, *set* papers and not *cases* reported, 259 were read by 114 active members; of these 210 were published in the ANNALS; that is, 81 per cent. There were also 54 papers read by persons not active members; some were members by invitation, others were persons resident in other cities; of these 54 papers the ANNALS published 27, just one-half. All the Presidential addresses were published. Six papers were published in abstract, one was that of Prof. Schott; the others probably were published in full elsewhere. One symposium on Tuberculosis was not published at all. [Three papers that were read before other societies were published in the ANNALS, and one that was not read anywhere; these four papers were paid for by the authors.] Some papers were not published because they were *never written;* for instance, "the Reminiscences" of Dr. J. Ford Thompson. Those who are familiar with the Society work of those 8½ years will remember some papers of which it was thought that publication was undesirable.

The following statement shows the number of papers read from January 1, 1902, to May 31, 1910: These papers were published in the ANNALS except as otherwise stated. Abbe, 2; Acker, 1; S. S. Adams, 4, one not published; Anderson and Atkinson, each 1; Balloch, 4; Barnes, 2; Barton, 4; E. B. Behrend, 1; Belt, 2; Bennett, 1; Bermann, 1, not published; Bishop, 3, one not published; Borden, 2; Bovée, 3; Briggs, 2, not published; Butler, 2, one not published; W. B. Carr, 1, not published; W. P. Carr, 4; Castelli, 1; Clark, 1, not published; Claytor, 7, four not published; Copeland, 1; G. Wythe Cook, 3; Deale, 1, not published; Dufour, 3, one not published; Dunlop, 3, two not published; L. Eliot, 4; W. G. Erving, 1; H. A. Fowler, 2, one

not published ; Frederich, 1 ; Fremont-Smith, 3, not published ; H. D. Fry, 7, one not published ; Samuel Fry, 1 ; Fuller and Griffith, each 1, not published ; Hagner, 2, one not published ; Hall, 1, not published ; Hamilton and Hardin, each 1 ; Hasbrouck, 3 ; Heitmuller, 1 ; Hickling, 4 ; Hooe and C. N. Howard, each 1 ; J. T. Howard and P. C. Hunt, each 2 ; Jack, 5 ; J. Taber Johnson, 3 ; W. W. Johnston, 1, not published, because he died soon after reading it ; Jung, 1, not published ; Keech and J. T. Kelley, each 1 ; A. F. A. King, 8 ; E. F. King, 2 ; Kober, 3 ; D. S. Lamb, 5 ; I. H. Lamb, 1 ; R. S. Lamb, 2 ; Loring, 1 ; McArdle, 1, not published ; McGuire, 2, not published ; McLaughlin, 3 ; Macatee, 1 ; E. P. Magruder and G. L. Magruder, each 2 ; Metzerott, 1, not published ; G. B. Miller, 3 ; J. P. Miller, 1 ; J. F. Mitchell, 3, two not published ; E. L. Morgan, 1 ; J. D. Morgan, 5, two not published ; Morse, S. B. Muncaster and Neff, each 1 ; Nichols, 8, three not published ; H. P. Parker, Parsons, Polkinhorn and Pool, each 1 ; Randolph, 4 ; Reisinger, 1 ; Reyburn, 7, one not published ; Rhett, 1 ; C. W. Richardson, 5 ; H. A. Robbins, 1, not published ; W. L. Robins, 1 ; Roy, 5 ; Sterling Ruffin, 2, one not published ; Shands and Shute, each 2 ; Slaughter, Fred Sohon, W. F. M. Sowers and Staples, each 1 ; Stavely, 4, one not published ; I. S. Stone, 7 ; Tayler-Jones, 2, not published ; J. D. Thomas, 1, not published ; J. Ford Thompson, 2, one not published ; M. F. Thompson, 2 ; Vale, 3, two not published ; Vaughan, 3 ; Vincent and Wall, each 2 ; Wellington, 1 ; Wells, 4 ; C. S. White, 2 ; Oscar Wilkinson, 4 ; W. W. Wilkinson, 3, one not published ; T. A. Williams, 4 ; Prentiss Willson and Anne Wilson, each 1.

That more or less of the papers read and published in the ANNALS have been considered of value is shown by the fact that from time to time these papers have been abstracted in other journals, especially the *Journal of the A. M. A.*, which contains abstracts from journals all over the world. Many requests for copies of the ANNALS have been received. If the papers published were not of value such abstracts would not be made and such requests would not be received.

Dr. S. S. Adams reported two cases of "Infantile Scurvy," and presented the patients. Discussed by Drs. Erving and Dunlop, Frank Leech, J. D. Morgan, Kober, Woodward, Wall, Chappell and S. S. Adams. See p. 409.

At this stage Vice President Dr. D. Olin Leech took the chair.

Dr. Prentiss Willson read a "Review of Pediatrics, with Special Reference to Acute Infectious Paralysis." Discussed by Drs. Wall, Lochboehler, F. Leech, Dunlop, Randolph, S. S. Adams, Parsons, Lemon and Willson. See p. 404.

Wednesday, November 2.—The President, Dr. Mackall, presided ; about 60 members present.

The Treasurer reported for October: Receipts, $565.00; disbursed, $165.22.

Dr. C. W. Richardson, Chairman of the Executive Committee, reported that the committee had considered the amendments to the charter proposed by Dr. G. Wythe Cook, and recommended that the amended charter, with certain changes made by the committee, be approved by the Society, and that the committee be authorized and instructed to use all diligence to secure the enactment of the amended charter by Congress. Dr. Cook offered three additional amendments.

Dr. Chappell moved that the report be accepted and that the Executive Committee be instructed to act as recommended in the report. Dr. D. S. Lamb moved to amend Dr. Chappell's motion as follows: That the Executive Committee's report be accepted and that 500 copies of the charter, the amended charter, together with the changes recommended by the Executive Committee, and any other amendments, be printed in galley form, and that a copy be sent to each member of the Society before the next meeting, at which time action should be taken upon the recommendations of the Executive Committee. The amendment and Dr. Chappell's motion, as amended, carried.

Dr. Richardson also reported the following recommendation, namely, that the ANNALS be continued for at least two more numbers, the cost of publication not to exceed $35.00 per number, and this expense to be met by private subscription. On motion of Dr. Kober it was ordered that the expense be met by the Society itself, and the recommendation as amended was adopted.

The Treasurer reported that Dr. J. Rosier Biggs, who was elected to membership October 5, was unable to sign the Constitution because of illness. He was instructed to ask Dr. Biggs to authorize some one to sign for him.

Dr. Chappell read a proposition for the amalgamation of the Medical Society with the Medical Association of the District of Columbia, and offered resolutions for carrying the proposition into effect. On motion of Dr. A. B. Hooe the resolutions were referred to the Executive Committee for consideration, and the committee was instructed to report upon the matter at the next meeting.

Dr. Luckett moved that the Society take notice of a suit for damages in which Dr. A. R. Shands had become involved, and that a resolution of confidence in Dr. Shands be adopted. Referred to the Executive Committee.

Dr. C. W. Richardson reported a case of Epithelioma of the Larynx, and presented the specimen and patient. Discussed by Dr. McKimmie.

Dr. A. F. A. King exhibited an instrument invented by Dr. W. N. Barnes, of Mississippi, called a "Fetal Ventilator," and

intended to allow the passage of air to the mouth of the fetus when birth is retarded by the after-coming head.

Dr. D. S. Lamb read the paper for the evening; title: "Aneurysms at the Army Medical Museum." Discussed by Drs. LaGarde, Williams and D. S. Lamb.

WASHINGTON MEDICAL ANNALS.

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EDITORIAL COMMITTEE.

D. S. Lamb, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W.
Benj. G. Pool, M. D., . . . 945 Rhode Island Avenue, N. W.
Prentiss Willson, M. D., ... The Toronto.

Editorial.

The Editorial Committee again invites attention to the fact that it frequently happens that after the printer has printed the discussions, corrected typewritten copies of them are received. To make the necessary alterations in the printed matter at that time costs at the lowest rate 80 cents an hour, a uniform charge among printers in this city. The Medical Society, having limited the Committee in what it may expend, it is with regret that the Committee is compelled to leave the printed matter, under such circumstances, unchanged. Members will understand, therefore, the reason why their *corrected* remarks do not appear.

Colorado Medicine.—This journal of the State Medical Association of Colorado is a journal of about 40 pages each issue, double column, which would correspond to about 68 pages of the Annals. The cost of publishing each issue of *Colorado Medicine* averages $178.33, or at the rate of nearly $4.50 per page. The cost of publishing the Annals is about $1.50 per page.

Dr. H. R. Harrover, Park Ridge, Ill., desires us to say that he will send a copy of the January number of *The American Journal of Physiologic Therapeutics*, of which he is the editor, to physicians requesting it.

Dr. William L. Miller, a member of this Society, died November 18, 1910.

Attention is invited to the advertisement of Parke, Davis & Co. in regard to hypodermatic tablets and Syrup Cocillana Compound.

Dr. Henry M. Newman, of this Society, died suddenly, November 11th.

Parke, Davis & Co. state that a man representing himself fraudulently as connected with their house is traveling from place to place, showing a card with the name "R. F. Hall" on it. Money should not be loaned him on the strength of his supposed connection with the firm.

Medical History Club of Washington, D. C.—Program for 1910–1911.—*Officers:* President, Dr. James Dudley Morgan; Vice President, Dr. G. Wythe Cook; Secretary and Treasurer, Dr. Truman Abbe; Corresponding Secretary, Dr. Huron V. Lawson; Executive Committee, Drs. D. K. Shute, P. S. Roy, I. S. Stone and the Officers.

Members:—Drs. Truman Abbe, Frank Baker, W. C. Borden, G. Wythe Cook, H. H. Donnally, Howard Hume, H. V. Lawson, T. S. Lee, G. Brown Miller, J. D. Morgan, J. B. Nichols, H. P. Parker, B. M. Randolph, C. W. Richardson, P. S. Roy, Sterling Ruffin, D. K. Shute, I. S. Stone, Joseph Wall, W. W. Wilkinson.

Meetings:—

Date.	*Essay.*	*Host.*
Nov. 26.	Avicenna and the Arabian School, By Dr. Wall.	Dr. Hume, 1235 Mass. Ave.
Dec. 31.	John Hunter and the Edinburgh School, By Dr. Miller.	Dr. Donnally, 1612 I St.
Jan. 28.	Auenbrugger and the Vienna School, By Dr. Lawson.	Dr. Baker, 1788 Columbia Rd.
Feb. 25.	Bichât and the French School, By Dr. Donnally.	Dr. Lawson. 1117 Vermont Ave.
Mar. 25.	Pasteur and the Bacterial Origin of Disease, By Dr. Hume.	Dr. Wall, 1730 M St.
Apr. 26.	Casserius and Anatomical Illustration, By Dr. Baker.	District Medical Society.

THE HIPPOCRATES SOCIETY, the object of which is "the cultivation and promotion of knowledge in whatever relates to the science of medicine and surgery," holds meetings on the second and fourth Thursdays of each month from October to May. The membership in this Society is limited to 25. The officers for the present season are: President, Dr. Charles S. White; Vice President, Dr. Thomas S. D. Grasty; Secretary-Treasurer, Dr. Laurence M. Hynson.

Schedule of Meetings for Session of 1910'–11.

Date.	*Place.*	*Essayist.*
Dec. 8. 1911.	Dr. Wm. Earl Clark, The Rochambeau.	Dr. E. L. Mason.
Jan. 12.	Dr. W. G. Young, 1315 N St.	Dr. A. L. Hunt.
Jan. 26.	Smoker.	Invited speaker.
Feb. 9.	Dr. J. Russell Verbrycke, Jr., The Rochambeau.	Dr. Edgar P. Copeland.
Feb. 23.	Dr. Edgar P. Copeland, The Rockingham.	Dr. W. W. Wilkinson.
Mar. 9.	Dr. J. Lewis Riggles, The Champlain.	Dr. W. H. Syme.
Mar. 23.	Dr. W. H. Merrill, 1913 14th St.	Dr. G. S. Saffold.
Apr. 13.	Dr. J. D. Rogers, 1752 S St.	Dr. S. H. Greene, Jr.
Apr. 27.	Dr. W. H. R. Brandenburg, 1101 14th St.	Dr. W. G. Young.
May 11.	Dr. Chas. M. Beall, The Huntington.	Dr. J. R. Verbrycke, Jr.
May 25.	Smoker.	President's Address.

PAMPHLETS RECEIVED.

Walter Wyman, "The Present Organization and Work for the Protection of Health in the United States;" reprint from Health Reports, 49.

W. A. White, "Bulletin No. 2, Government Hospital for the Insane, Washington, D. C., 1910."

J. H. Wright, "The Histogenesis of the Blood Platelets;" reprint.

J. C. Tello, "La antiguedad de la Sifilis en el Peru," 1909.

Reid Hunt, "The Effects of a Restricted Diet and of Various Diets upon the Resistance of Animals to Certain Poisons;" Bulletin 69, Hygienic Laboratory, U. S. P. H. and M. H. S., June, 1910.

M. G. Motter and M. I. Wilbert, "Digest of Comments on the Pharmacopoeia U. S. A. and National Formulary; for the calendar year ending December 31, 1907;" Bulletin 63, U. S. P. H. and M. H. S., June, 1910.

Atherton Seidell, "The Solubilities of the Pharmacopoeial Organic Acids and Their Salts;" Bulletin 67, Hygienic Laboratory, U. S. P. H. and M. H. S., June, 1910.

H. D. Fry, "Management of Labor in Minor Degrees of Pelvic Contraction, with Special Reference to the Relative Indications for Abdominal Cesarean Section and a Tabulated Report of 18 Cesarean Sections;" "The best Methods of Promptly Terminating the First Stage of Labor, with Special Reference to Vaginal Cesarean Section;" "The Relative Merits of Bipolar Version, with Slow Extraction and Accouchement Forcè in the Treatment of Placenta Praevia;" "The Surgical Treatment of Unrotated Occipito-posterior Position;" "The Indications for Abdominal Cesarean Section in Placenta Praevia;" "Streptococcic Infection in Childbirth, and the Application of Serum-Therapy;" "Myomectomy, Fatal Secondary Hemorrhage with Rising Temperature;" reprints.

United States Naval Medical Bulletin, October, 1910.

C. W. Stiles, "Taxonomic Value of the Microscopic Structure of the Stigmal Plates in the Tick Genus Dermacentor;" Hygienic Laboratory, Bull. 62, August, 1910, U. S. P. H. and M. H. S.

D. H. Currie and H. T. Hollman, "Studies upon Leprosy;" Bull. 39, P. H. and M. H. S., September, 1910.

J. W. Kerr, "History, Development and Statistics of Milk Charities in the United States;" reprint from P. H. and M. H. S. Reports, No. 50, 1910.

C. A. Herter, "Action of Sodium Benzoate and Benzoic Acid on the Human Organism," May 10, 1910.

Vol. IX. JANUARY, 1911. No. 6.

WASHINGTON MEDICAL ANNALS

REVIEW IN OPHTHALMOLOGY.*

By ROBERT SCOTT LAMB, M. D.,

Washington, D. C.

It should be understood in the review to follow that many of the important advances in ophthalmology of more technical character are either omitted or only just mentioned, in view of the fact that things of more general interest to physicians are found amply sufficient to occupy the time which can be devoted to this subject this evening.

One of the most important subjects now and for some years past, of vital interest to the laity as well as to the physician, is the prevention of ophthalmia neonatorum. During the past year much progress has been made in disseminating information among midwives and the charity patients of municipal and secular institutions as to the best means of prophylaxis. The New York State Committee, with the financial support of Mrs. Russell Sage and under the direction of Dr. F. Parke Lewis, of Buffalo, has done the work in a more scientific way and more thoroughly than has been possible up to the present time in any other community. Let me call attention to Mr. Sidney Stephenson's report before the Council of the British Medical Association, in which he says that ophthalmia neonatorum accounts for upwards of 10 per cent. of all cases of blindness. Cases of ophthalmia show a slight but steady decrease, so far as can be judged by reports from British lying-in-hospitals and eye hospitals. It is still the cause of at least one-third of the blindness in the inmates of British blind schools, such cases occurring in the practice of physicians as well as in those attended by midwives. He further suggests in this report that notification of the disease should

* Read before the Medical Society, November 9, 1910.

be compulsory, and puts the burden of inquiry as to facility of treatment and arrangement for treatment, if necessary, upon the authorities. As far as possible the separation of mother and child should be avoided. Bacteriological examinations should be undertaken free of charge, if necessary. Notices of the danger of its spread by contagion should be posted in the postoffice and other public places, and should be periodically distributed to every midwife. It is recommended that the medical staff of every maternity hospital should include an ophthalmic surgeon.

Because of Mr. Stephenson's prominence in the ophthalmic world it might be well to quote his directions to midwives and nurses: "Directions to midwives and nurses. In every case where a medical practitioner is not in attendance the midwife or nurse should adopt the following routine procedure: Directly the head is born, and before the eyes are opened, the lids and surrounding skin should be wiped clean on each side by a separate piece of sterilized wool. Nothing should be dropped into the baby's eyes. The face and the body should not be washed in the same water. Fresh water should be taken for each. Treatment of cases in which the mother suffers from a purulent vaginal discharge: If there is a purulent vaginal discharge, whether in pregnancy or of labor, medical help must be obtained. If a doctor is not already present when the child is born, he should be sent for immediately, in order that any necessary application to the child's eyes may be made. If there is any inflammation of the baby's eyes, however slight, shown by redness, swelling or discharge, the midwife or nurse must explain that the case is one in which the attendance of a registered medical practitioner is required, and medical aid must be obtained."

From his suggestions to medical practitioners might be taken the following: "Where infection is known or suspected to exist.—For the mother: Steps should be taken to examine bacteriologically any morbid discharge from the genito-urinary passages, and appropriate treatment should be adopted for the underlying condition. For the child: The baby's eyelids should be carefully wiped free from secretion with sterilized wool, and a single drop of a 1 per cent. solution of silver nitrate should be placed in each of the baby's eyes. There is some evidence to prove that silver vitellum (known commercially as "argyrol"), used as a 25 per cent. solution, is a non-irritating and efficient preventive of ophthalmia."

Bull suggests, 1st, as a satisfactory antiseptic a 1 per cent. solution of silver nitrate; 2d, informing prospective mothers and others of the dangers to the newborn child and of the character of the prophylaxis; 3d, teaching the laity and medical profession that the prophylaxis rests with the obstetrician and midwife.

The plan of the St. Paul's Hospital, Liverpool, of admitting the mothers of the babies that are born outside, together with the babies, is to be highly recommended.

The choice of an antiseptic may be summed up by the mention of the two most popular, viz: 1 per cent. solution of silver nitrate and 25 per cent. solution of argyrol.

Upon inquiry as to the cause of blindness in schools and asylums Snell reports the highest percentage; he found ophthalmia neonatorum the cause in 42.26 per cent.

Realizing the importance of vision economically, the *Lancet*, London, makes a comparison of the cost of educating two children, one blind and one of normal sight, to the age of eighteen years; the cost of the first being $2,500 as against $150 for the cost of the second. An ounce of prevention being worth a pound of cure, it would seem that the efforts of ophthalmologists generally to impress upon the profession and the laity the value of examinations of the eyes of school children have been well directed. We find that many children whose refractive errors would be otherwise unnoticed are having their deficiencies of vision discovered and properly eliminated, and that therefore many who would have been handicapped in their struggle throughout life are being made healthy and much more useful in the community. Under the direction of medical examiners school teachers have examined the eyes of school children, sometimes one eye at a time, sometimes both eyes, and have discovered that vision was considerably below normal, whereupon the child was directed to see the medical examiner, and the finding being sustained by him, a note of information was conveyed to the parents, whose moral duty was then impressed upon them: to have the child examined in one of two ways—in a public clinic, or in the office of some ophthalmologist. The best evidence of the beneficial effect of the scheme is shown by its great popularity. It seems that about 10 per cent. of the school children have fairly defective vision. Recent papers emphasize also the fact that the percentage of defective eyes among those in cities is

much greater than among those in the country, and that myopia is on the increase, as is particularly shown by a comparison of the eyes of children in the lower and higher school grades. The general conclusion can be reached that there is entirely too much reading in the life of children in proportion to the amount of physical exercise, including play.

Another form of eye defect which might be prevented is that form of blindness found in the offspring of consanguineous marriages, and of the marriage of persons congenitally blind. It would seem advisable that the medical profession take a stand against the marriage of such individuals, especially when interrogated as to the propriety of it.

Trachoma has been and is still a much talked about cause of blindness, and it still seems necessary to impress upon everyone the importance of early operation in this disease. The early detection and prevention of its spread, by impressing upon the laity the nature of its transmission, seems to be the duty of the general practitioner. It is a well known fact that trachoma, because of the seriousness of its sequelae, is a sufficient cause for the exclusion of immigrants.

It may be well to consider for a moment, because of the number of blind persons, what occupations are best suited to them, and I beg to call your attention to an article by Dr. L. Webster Fox, of Philadelphia, in which, after discussing at length the employment of blind masseurs in Japan practically to the exclusion of other masseurs, and stating that they have a school among themselves for the teaching of others, he says that in his opinion, from his own and the experience of others in the employment of such Americans as have been trained and such others, graduates of the London school for masseurs, that their touch is more delicate and satisfying to the patient and that therefore the results are better, and that their employment generally might be advantageous to the medical profession. In further considering the occupations of the blind, attention might be called to the work of Dr. Babcock, who has been so successful in specializing on diseases of the chest. Summor calls attention to the possibility of blind persons becoming physicians and of their specializing in the correction of speech defects, and that they can learn to do many things with their hands, and that any special talents which they may possess should be carefully developed.

In 1909, in his address before the Ophthalmic Section of the American Medical Association, the chairman, Dr. W. H. Wilder, called attention to the need for clinical research in ophthalmology, and stated that many questions remained to be solved. Since then some of these problems have been solved and some are being solved by the committees appointed at that meeting for the investigation of certain problems of a general nature, where many facts are needed to be correlated and compared, and their value ascertained, in accordance with the best information and understanding of the committee.

In the year 1909 the Section on Ophthalmology published some pages of discussion upon a paper entitled "The Relationship of Tuberculosis to Diseases of the Eye," and it is well to call attention to the report of the committee appointed to investigate this subject. This report, after citing the relationship of tuberculosis to blepharitis, dacryocystitis, follicular conjunctivitis, phlyctenular conjunctivitis and keratitis, interstitial keratitis, keratitis (other forms), episcleritis, scleritis and sclerokeratitis, chronic iritis, chronic iridocyclitis, uveitis, choroiditis and chorioretinitis, concludes that von Pirquet's test is not reliable for determining the etiology of suspected eye lesions; that the same may be said of Calmette's test, and that the subcutaneous injection offers the best result, because it is more apt to give a local in addition to the general reaction. In 59 cases of keratitis, episcleritis and sclerokeratitis 56 gave positive evidences, 27 were given the subcutaneous test and 22 gave local reaction.

In the work of Stargardt microscopic examination of the excised conjunctivae phlyctenulis showed large epithelioid cells, large pale nuclei, several nucleoli. There were also lymphocytes, but no giant cells or bacteria.

Turning to vaccines, serums and radiotherapy we find cases of tuberculosis being successfully treated by the bouillon filtrate of Denys and the method of von Hippel; cases of gonorrheic nature, metastatic, subacute or chronic being frequently influenced by the serum. The antistreptococcus serum is of doubtful or negative value. The meningococcus serum of Flexner is useful. Subconjunctival injections in diphtheritic conjunctivitis are useful; however, instillations of serum are usually sufficient in other conditions. Deutschmann again recommends his yeast serum for suitable cases; the active principle being precipitated from the

blood serum and dissolved in water has given best results, in hypopion, keratitis and in infective ulcerations of the cornea. He claims its usefulness in infective iritis, but acknowledges its comparative uselessness in vitreous inflammations. Dose, 4 c.c. daily injected into the muscles of the chest.

A word as to ophthalmic reactions. In typhoid fever, of 93 cases 91 reacted, whereas in normal persons and 30 non-typhoid cases no reaction occurred. In tuberculosis it has been found inferior to subcutaneous injection, and as this latter is more reliable and less dangerous, the ophthalmo-reaction test is being abandoned.

Under the head of non-specific or paraspecific serotherapy Darier and many others are claiming, after its use, cures of ulcerations of the cornea, of traumatic or metastatic origin, and cases of gonorrheal iritis, and some go so far as to recommend it in any traumatism of the eyeball as a prophylactic.

In radiotherapy Lawson and Davidson report excellent results in three cases of hypopion ulcers, two of vascular ulcer, one of punctate erosion, one of active pannus; whereas, in an old case and in recurring episcleritis there was no improvement. As to radium, while Darier chooses it for small epitheliomas, Coover considers the x-ray better and claims to have cured also some inflammatory cases of acute and chronic nature, and Linnell considers his own results with x-ray as little short of marvelous.

Subconjunctival injections are still holding their place obtained during the last decade, and some additional substances for use by this method are being added from time to time.

Dionin has continued popular, and a new drug, ethylmorphine hydroiodide, has been added to this group to the great benefit of the patients.

Some diseases have been considered because of a few new points of relationship with eye symptoms. In syphilis the finding of the spirochaeta pallida, or a positive Wassermann reaction, whenever one has an eye lesion of obscure origin, should warrant immediate antisyphilitic treatment.

Gonorrheal metastases have been described, and excellent results have been obtained with serum.

In pellagra 90 cases have been reported by Whaley, Welton and Clark. Some of the symptoms are, drooping of the upper lid, no avoidance of light; on raising the head the patient's lid

droops lower. The pupils are unequal and small, and light reaction is diminished. Cataract is more common than usual. Marked eye symptoms indicate early and fatal termination.

Leprosy has been found in the cornea and iris by Collins and True. Generally the eye symptoms occur late, and usually nodules appear at the lid margins.

The arterio- or angio-sclerotic changes in the eye and their relation and prognostic value to the future of the patients is well discussed by various observers, as Bruner and Jackson. The importance of an ophthalmoscopic examination in these cases cannot be too strongly urged, as the corroborative and prognostic value is well worth knowing to both physician and patient.

Among the new instruments is one invented by Schoitz, called a tonometer, for taking the tension of the eye, and looking over the literature I find that the consensus of opinion of those using it is that it is the most reliable yet devised for this purpose. Experiments with it upon normal and diseased eyes, which had been treated with such drugs as cocain, adrenalin, atropin, eserin and pilocarpin indicate that our *tactus eruditus* is not reliable, that the tension is not altered by cocain or holococain, and is only slightly decreased by pilocarpin and eserin, except in glaucomatous eyes, when it is decidedly diminished, and that atropin has no appreciable effect.

We have other new instruments, as those for fundoscopy, diaphanoscopy or transillumination, self-illuminating microscopes, test cards and scotometers, and one would be compelled to occupy an evening in their description and the indications for their use.

Many new operations have been devised and some old ones revised and modified. Among these I wish to call attention to the continued discussion of Smith's method of cataract extraction in capsule, and to say that it seems to be gaining in favor.

The punch and trephine have been suggested and used for relief of tension in glaucoma; as also sclerectomy, with iridectomy and an operation, iridencleisis—its object is the formation of a subconjunctival cystoid scar—has been done successfully on fifty cases which have been reported, and it seems especially suited to cases of chronic and absolute glaucoma.

The injurious effects of light and other rays upon the eyes are being well considered, with much discussion abroad regarding the value of tinted glasses in cutting out certain color and light

rays. It is of value to those in the army and navy more than to the civilian, but it is of value to him in that he is so often nowadays working by artificial light. A summary of the findings to date would indicate that the only value of any of these tinted glasses is in cutting down the brilliancy of the light rays, and, as these are apparently the most destructive to the tissues, it would seem that the value of these glasses has been overestimated. Yet, it may be said that experience with amber and amethyst-tinted glasses would indicate that their effect is beneficial physiologically and therapeutically, in contradiction to all laboratory findings.

Eyestrain we have had with us from time immemorial, and probably will have with us to the end of time, yet we are getting suggestions now and again for its eradication. Its effect upon the general system is well shown in an article by Sattler. Another by Snydachen points to the relation of diseases of the sinuses to eye-ache. Risley's case of distension of the anterior segment of the sclera in a boy whose headache, persistent for five years, was cured by a +2. D. lens, would corroborate Mackey in his contention that all obscure headache requires ocular examination. Stephenson, and again Risley, report cases of hallucinations, mental delusions and fear of insanity or loss of mental control cured by the correction of refractive errors. Lewis reports tinnitus and symptoms of vertigo, and three patients with a symptom-complex resembling Menière's disease, brought about by muscular incoördination of the eyes, cured by wearing proper correcting lenses.

In a paper before the Ophthalmic Section of the American Medical Association, 1910, Woods gave additional evidence of the cause of diseases of the eye from intestinal autointoxication, and, while showing its proof clinically, he intimated the futility of trying to identify the deleterious substance or substances with our present knowledge and means of analysis.

For those of you who may examine persons desiring to enter the different public services it may be well to consider the proposed standardization of vision by these departments. Dr. W. C. Posey called attention to the woeful lack of standard and dissimilarity in the requirements of the various branches of the services, and especially the utter disregard of visual test among the State pilot examining boards. Furthermore, he states, that, after col-

laborating with Drs. L. Webster Fox, de Schweinitz and Myles Standish, in considering and revising the requirements, there were submitted to the heads of the various departments certain standards which were peculiarly adapted to each service, and in the replies it had been indicated to him that the heads of the various services recommended, and as far as possible would require, the standards as submitted. Upon looking over these requirements and comparing them with the requirements previously in use it would seem that the work done by this committee should be very highly commended, as the proposed standards show a very careful and reasonable adaptation to the character of the work in which the applicant proposes to engage. Nowhere is this better shown than in the adaptation to the Federal pilot and State pilot services. As it would only take up time to mention these requirements, and as a copy of them can undoubtedly be obtained by application to the head of any service, I need not review them here.

A few comments upon the report of the committee on legislation in optometry might be pertinent, and I would call your attention first to the fact that it became necessary to appoint such a committee to investigate and act against such legislation as had been proposed by opticians throughout the country for the purpose of legalizing their work and licensing them—in other words, giving them a scientific standing and so misleading the public into believing that they were physicians. Prior to the appointing of this committee they had been licensed in twenty-four States. Since the appointment of the committee there has been no bill pass any legislature, although many bills have been introduced, and when one would fail another would be substituted. The committee calls upon the general profession throughout the country for support in reaching legislators, State and national, in an effort to prevent the licensing of these men, many of whom are entirely ignorant of the subject, simply receiving their diploma upon payment of a certain fee. The committee suggests another means of offsetting the work of the optician, and that is that the family physician learn to do refractive work, and it is with great pleasure that I call your attention to the fact that another committee, after thoroughly investigating the possibilities in the case, has reached the conclusion that it is best to continue to encourage refracting by the family physician ; and the com-

mittee wished to be allowed to unite with three members of each State society in order that it might bring before those societies the reasonability of the teaching of refraction and external diseases of the eye, and encourage the family physician to familiarize himself with these two features of ophthalmology.

I might pick out a few points from the report of this committee illustrating the reason for this action. First, family-physician refracting promotes the coöperation of the family physician and the ophthalmologist. If every family physician were to do refraction and were to treat eye diseases there would still be ample work for the ophthalmologist, in consultation and in cases which would be easily recognized by the family physician to be beyond his ken; more especially, as with the carrying out of the proposed suggestion to teach ophthalmology to undergraduate students and family physicians their greater familiarity with eye conditions would make them recognize earlier the more serious ones. Second, the optician is doing a vast amount of damage in his work, because of his ignorance and incompetence. Third, the learning of refraction and of the usual eye diseases would take only a short time and only a very little extra effort on the part of the family physician, and would bring much better returns than his occasional surgical cases. Fourth, the affected persons in the community would be greatly benefited by the intelligent treatment thereby afforded them. Another point in the report is, that having coöperated with several State Boards, these Boards have decided to require practical diagnosis of an intraocular disease with the ophthalmoscope; and the demonstration upon a patient of the use of lenses in the correction of refractive errors; and further, that a number of Boards which have not yet adopted this requirement have it under consideration and seem in favor of it, so that it seems inevitable that in the future the curriculum of any first class medical school must contain a practical course of clinical ophthalmology in order that students may go before State Boards properly prepared.

I crave the pardon of my more critical brethren, but I feel constrained to bring before you, "Lest we forget," the names of a few who have been famous, or nearly so, in ophthalmology and who have passed from among us. Let the first of these be Douglas Argyll-Robertson, who enlightened us on the calabar bean and who, in his excellent work on spinal miosis, gave us

the description of the condition of this pupil which is still known by his name. The next, Simeon Snell, distinguished in the profession, and best known for his economic writing on industrial diseases and injuries. Third, Marcus Quinn, whose connection with Moorfields Hospital, London, for a period of more than thirty-five years, gave him the material from which he acquired sufficient knowledge to write and leave for our benefit that invaluable work upon the ophthalmoscopic evidences of arteriosclerosis. Others of note, perhaps known to some of you, are Theodor Englemann, one time assistant to Donders; Ferdinand Hotz, of Rush Medical College; Jose Ramos, of Mexico City; Thomas Spence Meighan, of Glasgow, whose greatest contribution was on optic neuritis of intracranial origin; Theodor Saemisch, the co-editor with Alfred Graefe, of a handbook on diseases of the eye, and originator of the incision of hypopion ulcer of the cornea; he was connected with the University of Bonn for fifty years. Last, but not least, Dr. George C. Harlan, of the Wills Eye and Pennsylvania Hospitals, Philadelphia, and of the Pennsylvania Institute for Instruction to the Blind; his book, "Eyesight and How to Care for It," is quite popular and useful. He was a recognized authority on all ophthalmologic subjects, was quite familiar, because of his knowledge of several languages, with foreign literature on the subject and was a careful and judicious operator who originated several ingenious and excellent operations.

Dr. Dye expressed his appreciation of the review and his pleasure at hearing it.

Dr. Shute said that after abundant opportunity to test the relative merits of argyrol in solutions from 25 per cent. to 50 per cent. and of silver nitrate in 1 per cent. and 2 per cent. solutions, he had reached the conclusion that the latter is much the better, and 2 per cent. solutions are better than 1 per cent.; such solutions are entirely harmless when properly used. He emphasized the importance of having the eyes of children examined when they first enter school; this importance was exemplified recently by the case of a boy who had been regarded as stupid at school and had suffered much from the taunts of his fellows, but who was found to be suffering from congenital cataract. The importance of eye strain as the cause of many reflex disturbances needs to be emphasized even at this late day. Dr. Shute had lately relieved two children of seemingly minor epileptiform disturbances by properly fitting them with glasses. Of interest to ophthal

mologists is a point with regard to slowly developing senile cataract in which there is a temptation to operate prematurely; a drop of a 5 per cent. solution of euphthalmin will sufficiently dilate the pupil so as often to allow reading all the morning, and the drop may be repeated in the afternoon. No harm results from this practice.

Dr. Griffith congratulated Dr. Lamb upon his paper.

Dr. S. B. Muncaster said that Smith's intracapsular cataract operation will never be done in this country as it is in India; it is too dangerous. The people there are so phlegmatic that proper control can be had; patients here are too nervous. He had also used of late Forster's capsule forceps to remove a large piece of the capsule of the lens. When you cut the capsule with the cystotome the anterior capsule generally remains over the pupil. The cortical substance that is left often sets up a traumatic iritis, and causes most of the tough, fibrous tissue that we have to contend with in secondary cataracts.

He had not performed a secondary operation during the last three years since using the capsule forceps.

He operated on a patient, age 73, for immature cataracts on each eye during the last eighteen months with a capsule forceps. She has perfect vision with glasses.

Dr. Roy said that Dr. Lamb's paper had interested him very much. Recently he had heard a paper at a meeting of the Medical Society of Virginia, in which the statement was made that 50 per cent. of the blind in Virginia institutions were blinded by ophthalmia neonatorum. He urged the passage of a law requiring the instillation of 2 per cent silver nitrate solution into the eyes of newborn infants as a routine measure and making it obligatory to specify on the birth certificate that this had been done.

Dr. Butler said that progress in ophthalmology of late had been of the intensive order, that is, by elaborating accepted teachings rather than making new discoveries. One of the most noteworthy items of progress had been the movement to standardize the requirements for visual acuity; to agree upon a common standard, for all services of a public character where visual tests are required, as to what constitutes perfect vision, and what is to be accepted as sufficient vision. The paper of Herbert Parsons before the Ophthalmological Section A. M. A., showing the effect of light on the eye, should be read by every one interested in the subject. The review of Dr. Lamb's appears to be a review of the work done by that Section at the last meeting.

Dr. Williams asked if Dr. Shute had seen the patient (referred to as cured of epileptiform seizures by properly fitted glasses) in a fit. Spratling had found that epileptics are not helped, so far as their epilepsy is concerned, by correction of refractive defects. Most neurotic subjects will be found to be so, regardless of their eyes, not because of them.

Recent study of the visual fields in cases of increased intracranial tension has shown that reversion of the color fields is not a sign of hysteria but of intracranial tumor. A paper by Parker, of Ann Arbor, contained the results of the study of fifty hysterics; among these there was some contraction and inversion found; but no diagnostic data were given, and therefore the paper is inconclusive to establish a controverted dictum. From Paris recently have come reports of investigations which make it appear that the ocular symptoms of tabes arise from inflammation of the sheaths of the optic nerves (See *Amer. Jour. Med. Sci.*, 1910).

A sign of arteriosclerosis recently pointed out is the glistening eye, due to a parchment-like atrophy of the conjunctiva over the sclerotic, with some ridging of the sclerotic.

Dr. Nichols said that Dr. Lamb, in speaking of the use of tuberculin for diagnostic purposes, had referred to "local reactions;" did he by the term mean reaction at the point of injection or reaction in the eye? It was important to know exactly which of three reactions produced by tuberculin is meant when speaking of this procedure. These reactions are known as (1) general or constitutional; (2) local, that is, at the point of injection; (3) focal, at the point of infection. Of these the general and local reactions are not absolutely reliable; the focal reaction is the only one with pathognomonic value. He asked Dr. Lamb if the reactions in his cases were focal or local.

Dr. Oscar Wilkinson deprecated the family practitioner refracting movement. As a matter of fact, in his opinion correction of refractive errors and muscular defects requires as much skill and experience as any other department of ophthalmology. It seemed to him that there are more good ophthalmic surgeons than there are good refractionists. All ophthalmologists must have the experience of having patients come to them for treatment wearing badly fitting lenses prescribed by some other ophthalmologist.

Dr. Lamb said that the object of teaching the family practitioner to refract is to make him capable of doing this work and thus save the public from incapable opticians. Difficult cases will naturally be referred to the ophthalmologist, and the practitioner will be keener to detect those requiring the expert's attention. In the references to tuberculin reactions he had meant focal reactions. He called attention to the anatomical similarity between the retina and the spinal cord; the retina being a part of the fore brain, its vessels take on the same lesions as those of the brain itself. In kidney lesions ocular hemorrhages will usually be subconjunctival; intraocular hemorrhages are usually associated with lesions in the brain. Parker's work corroborates that of Gould and Spratling, but he advocates the relief of all cases of eye strain in epileptics in hope of curing a few. Dr. Lamb concurred in Dr. Butler's estimate of the importance of

standardization of visual tests. He also called attention to the fact that Crèdè originally recommended that the 2 per cent. nitrate of silver solution be applied to the eye with a swab; with that technic there would be no excess to neutralize. Dr. Lamb doubted the possibility of enforcing any law seeking to make the use of Crèdè's method in obstetrics compulsory.

With respect to the treatment of unripe cataracts Major Smith's operation is useful for this as well as the mature form; the operation, however, must be somewhat modified on account of the nervousness of American patients. Euphthalmin is a good midriatic, and the suggestion of Dr. Shute was good, but the early application of the intracapsular operation really makes unnecessary the continued use of midriatics while waiting for the cataract to mature; the only danger of the operation is the loss of some of the vitreous, but this is not now regarded as so serious an accident as it was formerly considered. There is no great danger of retinal detachment.

KIDNEY DISPLACEMENTS, CONGENITAL AND ACQUIRED, AS ETIOLOGICAL FACTORS IN DYSTOCIA. REPORT OF A CASE DUE TO MOVABLE KIDNEY. (ABSTRACT.)*

By PRENTISS WILLSON, M. D.,

Washington, D. C.

The kidney may be found in the true pelvis under two conditions. It may be located there congenitally, or an extremely movable kidney may prolapse into the pelvis. In either event, should labor ensue, dystocia is very likely to be caused. Twenty-eight labors in ten women with a congenital pelvic kidney were collected from the literature. The misplaced kidney was the left in every instance. In the twenty-eight cases there were two maternal and five fetal deaths. One baby was born with a broken arm. Of the maternal deaths one was due to pulmonary edema, the other to rupture of the uterus. Transverse presentation occurred three times.

Only two cases of dystocia due to the prolapse of a floating kidney into the pelvis in front of the pregnant uterus were found in the literature. Both mothers recovered and both infants were lost. One baby was delivered by version and extraction, but the kidney so filled up the pelvis that the delivery of the after-coming head was unduly delayed and a fatal asphyxia resulted. The other child was delivered with Tarnier's basiotribe. The case

* Read before the Medical Society, November 16, 1910.

now reported makes the third on record. The patient was a primipara twenty-one years of age. She gave a history of attacks of acute pain in the right side, followed frequently by the passage of a large quantity of pale urine. The antepartum examination disclosed no abnormalities except a slight contraction of the transverse diameters of the pelvis. An examination made after three hours of hard second-stage pains disclosed the cervix nearly completely dilated, and the head well engaged at the brim. The concavity of the sacrum was occupied by a mass of the shape, size and consistency of the right kidney. The kidney was freely movable, and during examination by the resident physician it was forced up over the brim of the pelvis. The woman was then delivered by forceps. Immediately following delivery and a few days later, at the time of repairing a vaginal laceration, the kidney could be made out freely movable in the right abdomen and capable of being replaced in its normal position. The baby weighed eight and three-quarter pounds, and was born alive and well.

Dr. Moran said that much of the interest in the condition arises from its rarity. The differential diagnosis may be difficult, especially as between movable kidney and pedunculated fibroid. The treatment must depend upon the conditions present in any given case. If the kidney can be moved upward, the postural treatment will probably be best. If impacted, some cutting operation will be required; if the child be alive, Cæsarean section; if dead, craniotomy. The importance of careful examination of the pregnant woman during gestation is again emphasized by this further possible complication of labor.

Dr. A. F. A. King said that the Society should feel indebted to Dr. Willson for his paper, which probably is the latest word upon the subject and contains all that is known of this rare condition. Dr. King knew nothing of this cause of dystocia until the publication of Cragin's case, mentioned by Dr. Willson.

Dr. H. D. Fry congratulated Dr. Willson upon the presentation of this unique case. Dr. Fry's attention had been called to the condition by Cragin's case; there were, however, five earlier cases reported in the literature and mentioned by Cragin, whose case was the sixth; thus Dr. Willson's case makes the seventh. Little mention is made of the condition in the text books; Jewett says most about it, but is somewhat confused in his narration of the cases. Several times in Dr. Fry's experience he had watched women with floating kidneys pass through pregnancies; they had uniformly been relieved by the advancing pregnancy, the rising uterus acting as a support. As to the importance of palpating pregnant women, with this condition in mind, his experience would somewhat minimize the importance of this procedure. Before operating to relieve the dystocia from

this cause, it is best to try to replace the prolapsed kidney with the patient in the genu-pectoral position or in the Trendelenburg position. If the kidney be adherent and immovable on that account, it would be better to elevate it by simple laparotomy and let labor proceed naturally, than to perform Cæsarean section at once.

Dr. I. S. Stone thought that perhaps Dr. Fry had misunderstood Dr. Moran's statement; as Dr. Stone had understood it, Dr. Moran had advocated early abdominal examination of the pregnant woman. It must be most difficult to find a movable kidney after the sixth month of pregnancy. Dr. Stone commended Dr. Willson for the cleverness of management which enabled him to replace the obstructing kidney in his case.

Dr. Prentiss Willson said that he had erred in his paper in not giving Cragin credit for finding in the literature five cases of dystocia caused by congenital pelvic kidney; Cragin had, however, missed two cases, already reported at the time of his paper; there had been two since, and Cragin's made the tenth.

The kidney in the case reported in the present paper was not congenitally in the pelvis; it was very freely movable in the abdomen and wandered into the pelvis at the time of labor.

ANEURYSMS IN THE ARMY MEDICAL MUSEUM. ABSTRACT.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

There are 116 specimens of aneurysm in the Army Medical Museum. All those received from the army are from men, making the proportion of men to women 8.4 to 1.0; the proportion usually stated is 7 to 1. Of the 116 specimens 72 are of the arch of the aorta, 7 of the thoracic aorta, 14 of the abdominal aorta and the remainder divided up among many other arteries. Of the ascending, transverse and descending parts of the arch, the proportion is 7, 4 and 2. Some specimens show two and even three aneurysms. The ages at death were between 24 and 94; 60 cases were between 30 and 60 years of age. The cause was stated in only ten cases, two of which were shot wounds and the others were from some sort of strain. In 83 cases there was definite statement that the blood vessel was diseased, or the specimen showed that fact. It is probable that aneurysms develop only in vessels already diseased. Syphilis in 11 cases, probably in others

* Read before the Medical Society, November 2, 1910.

also, though not stated. Sacculation in 77, fusiform in 28; 10 dissecting, one aneurysmal varix, one varicose aneurysm. In at least 76 cases the aneurysm ruptured, in five of which a diffuse aneurysm was thus formed. In two cases the aneurysm underwent suppuration. In many cases the patient died of some lesion supervening on the aneurysm or not at all connected with it; six persons died of pneumonia. Heart enlarged in only 22 cases, and in some of these the enlargement was from valvular disease. Treatment varied; rest in some cases; various drugs; potassium iodide seemed to be of use; pain controlled by morphia; venesection, compression, coagulating injections, wire introduction, electrolysis, ligation.

Dr. La Garde (U. S. Army) said that from the exhibit made by Dr. Lamb it would seem that soldiers are particularly prone to aneurysms. It has been so in the past, and from reports of casualties in recent wars it would appear that in future warfare aneurysms will be even more frequent. Present day armaments will cause increased occurrence. Instead of the artery being pushed aside as by the old lead bullet the jacketed bullets of reduced-caliber rifles cut or penetrate arteries and subsequently cause sacculated or diffuse aneurysms. An observer of the effects of rifle wounds in the Russo-Japanese war reports that aneurysms in the extremities were very frequent, and that wounds of the cavities produced very often fatal hemorrhage; the vessels traversing the cavities, being unsupported by resistant tissues, when they are injured bleed unhindered with fatal results. In this way death on the field from primary hemorrhage has greatly increased on account of the cutting effects of modern bullets upon blood vessels. Injury to vessels in the limbs causes a momentary spirt of blood which is checked by closure of the narrow bullet channel by muscles, fascia, etc., thus preventing what would have ended in fatal primary hemorrhage. Such cases later are observed to have aneurysm develop at the point of injury. Experiences of this kind were noted at Santiago, in South Africa, and later in Manchuria.

Dr. Williams said that the prognosis in aneurysms of the type described by Dr. La Garde, being of traumatic origin, is poor. But pathologists show that the majority of aneurysms of non-traumatic origin are caused by syphilis; that being so, the prophylaxis is in our power; and we know and can apply the remedy. Dr. Williams called attention to the fact that the so-called miliary aneurysms of Charcot have been studied more particularly of late, and it has been found that the nodular enlargements of the finer cerebral vessels are not true aneurysms, but false aneurysms due to perforation of areas of arteritis.

Dr. Lamb had been much interested in the remarks made in discussion, but had nothing to add.

SPECIMENS OF HANDWRITING BEFORE AND AFTER TREATMENT BY PSYCHOANALYTIC MEASURES FOLLOWED BY REEDUCATION.*

BY TOM A. WILLIAMS, MB. CM. (Edin.),

Washington, D. C.

Based upon five cases, three of which underwent prolonged study, the conclusion was reached that in every essential these cramp neuroses called professional are tics. The success of their treatment as such is confirmatory. The disability at first occurrence may arise from fatigue, but even in that case it is only maintained by the fixed idea of incapacity. An ideogenetic affect must be incriminated as part of the syndrome. It is that idea which must first be attacked. A new mental attitude must be acquired, just as the author has shown to be necessary as regards traumatic neurosis. Failure is found to be due to lack of dynamic conviction, as analysis shows. Passive acceptance of the doctor's dictum is useless, the patient must be converted; and a long struggle is often required.

Although thoroughly explored, in no case did psychoanalysis reveal a sexual origin of the perturbation; although in the longest and most difficult case the shame affect played a certain part.

Reëducation was begun early in all cases. *Three writer's cramps have completely recovered.* One torticollis and arm cramp was due to an unpleasantness with a person who sat behind the patient to her right while they sorted bills in the Treasury. She was almost well, until she insisted upon prematurely returning to work. She, of course, relapsed and ceased treatment; but has maintained part of her improvement as regards the torticollis, but cannot use the right hand at all. One case refused treatment and gave up his occupation.

CASE 1.—A paymaster had to sign over two hundred checks a day. After *grippe* his signature was a little uncertain, and one day payment was refused by the bank. Dread of losing his position further augmented his difficulty; but he consulted me early and one interview placed him in the way of cure after a few weeks absence from work. His hardly legible scrawl then contrasts sharply with the bold and clear signature two and a half years later. The steps were (1) discovery of the cause; (2) removal of the besetment, and (3) correction of the awkward position of the hand and the over violent rigidity of the muscles of the arm. This last was done by gymnastics designed to give free movements, and by the frequent practice of free writing in a smooth, large, round hand, a little at a time.

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*Shown before the Medical Society, November 30, 1910.

CASE 2.—A woman who had always disliked correspondence, and in consequence wrote very rapidly. During a time of domestic stress and anxiety on account of sickness she was particularly impatient of the Christmas letters she had to write, and the cramp occurred. When I saw her two and a half years later there was no marked fear-affect nor insistent desire to recover. But in about three months she gradually became able to write a normal hand without difficulty, as a result of graduated exercises made possible by freeing her mind from the besetment which produced the cramp which occurred upon her attempts to write.

CASE 3.—Singer's cramp and pen paralysis in a psychasthenic young woman, age, 19. After a concert she received an anonymous letter which created shame when she sang in public thereafter. Her anxiety to be a successful singer, in conflict with this shame, produced a pharyngeal cramp on account of which she had to give up singing for some years. Fear of laryngeal tuberculosis also played a part in this. Some years later, a time of stress and poor health, combined with hyperconscientious efforts to do credit in a difficult clerical post led to a writer's cramp. She came to me two years later, after varied unsuccessful medical and orthopedic attempts to cure her. She was in despair at being unable to write, as she had to make her living ; and although she had persevered she could not face an audience in solo, so that her earnings as a singer were insignificant. After six months of most arduous treatment, she can write perfectly with both left and right hands ; and the singing cramp is greatly improved, and she is about to take a choir position once more, having already taken a clerical one. In this case the chief difficulty was to overcome the patient's false belief in a physical disease, first in the hand, then in the shoulder, later in the constitutional state due to a hypothetical tapeworm, and finally in a cerebral defect of neurasthenic type not psychological in mechanism. Eventual success in removing these beliefs led to the fruitful practice of gymnastic and caligraphic exercises, which before that had only aggravated her disability.

[In each case different specimens of the writing were exhibited.]

In his interpretation the author denies an inability to write *per se*, but shows that the occupational act is impossible only because the muscles which should perform it are prevented by a tonic tic, which is induced by an associational complex aroused by the attempt to write or other occupational act.

Physiological instances will illustrate. A person cannot sing while the largyngeal muscles are engaged in swallowing, one cannot play the piano with a hand which is at the same time sewing. No more can writing be done with a hand the muscles of which are performing a tic. Hence, it is essential to remove the ideogenetic psychological basis before the psychomotor disciplinary

exercises can have any success in removing the tic which interferes with professional acts.

Dr. J. D. Morgan asked if these cases did not belong in the category of anxiety psychoses. Is the condition apt to recur in these patients? And if recurrence does take place would not this indicate some mental enfeeblement?

Dr. S. S. Adams could speak feelingly upon this subject. He had been the victim of pen palsy for three years; whether the condition was a psychosis or not he does not know, but whatever it was the affliction was a most painful experience. The onset was most abrupt; he was signing a check, and in the midst of his signature the pen simply slid off in an irregular line and he was unable to finish. Whether his case was of the same sort as those reported by Dr. Williams seemed unlikely; he felt sure that the treatment by suggestion and caligraphic exercises, as advised by Dr. Williams, would have had little effect. Dr. Taber Johnson had spent about $10,000 trying to be cured of this disease and had utterly failed.

[**Dr. T. C. Smith** made some humorous remarks about the chirography of the members.]

Dr. Hickling had hoped that Dr. Williams would have something new to show in the treatment of this disease so difficult to manage. The specimens did not seem like the writing of victims of typical pen palsy; and the methods of psychoanalysis will not be of service in the ordinary forms of writer's cramp. These cases must have been pure neuroses, allied to the hysterical or so-called neurasthenic types; Dr. Hickling hesitated to use these terms, but they seemed to be the only ones available at this time. From the studies of Freud we have come to know that submerged complexes may occasion disturbances of this kind, and instances are mentioned by Freud. These complexes are most obscure at times, but Freud brings them out very clearly by his simple methods.

Dr. Roy had had a patient with pen palsy who recovered the power to write with the right hand after he had taught himself to write proficiently with his left hand. Could this cure be attributed to the relief of mind caused by the patient's renewed confidence in his ability to write?

Dr. A. F. A. King called attention to what seemed to him a curious fact; when we learn to write we instinctively learn to write backwards with the left hand what we laboriously teach the right hand to do. [Going to a blackboard he demonstrated his ability to do this.] Is there any special center in the brain governing the power of writing?

Dr. Williams replied to Dr. King that it is a moot point whether there is a special writing center. Dr. King's faculty to write backwards with his left hand is one that most children

have, but that few adults retain. It is due to a hypothetical center for the control of the praxias, a center to preserve the memory of the mechanism of an act, and from which the physiologic analogue of a unilateral act is carried to the opposite side of the body. Déjérine believes there is no center especially for the act of writing, but that the act is carried out by the arm centers in the Rolandic area under the direction of other higher control centers. Dr. Roy had asked if the patient had been cured by the confidence inspired by learning to write with the left hand; Dr. Williams would answer no, because the right hand is not yet entirely well. Dr. Morgan had asked if these were instances of anxiety neurosis; again, no, because the anxiety arose only after the inability to write had been noticed. Reference had been made by Dr. Smith to Dr. Williams' rather illegible chirography; here the difficulty is a more rapid flow of ideas than ability of the muscles to put into written words. In some patients the inability to write has its foundation in an intense effort to finish a disagreeable task; perhaps Dr. Adams' case had been of this type.

The patients whose cases had been reported had previously had rest, residence in the country, change, etc., without benefit; they presented the usual contractures of the hands, stiffness of muscles, etc., that ordinarily accompany such cases; he had not thought it desirable to lengthen his paper by the inclusion of these details.

CASE OF EPITHELIOMA OF LARYNX.*

By C. W. RICHARDSON, M. D.,

Washington, D. C.

The patient was a white man who came into the dispensary of the Episcopal Eye, Ear and Throat Hospital for treatment on account of chronic hoarseness. Dr. McKimmie made a provisional diagnosis of epithelioma of the larynx, and Dr. Richardson agreed with that finding, immediately taking the man to his office for the removal of a portion of the growth for examination. There was an oblong growth at the left of the larynx, involving the true and false cords extending from the anterior commissure back almost to the arytenoid. The man had been hoarse since last April, but had no other symptom except slight dyspnœa at times. Dr. Nichols reported that the fragment submitted for examination was an epithelioma. Three weeks ago Dr. Richardson enulceated the growth. The thyroid and cricoid cartilages were split, without tracheotomy. The cartilage was found to have undergone

* Reported with patient and specimen to the Medical Society, November 2, 1910.

marked calcification, more so than he had ever before found in so young a patient, making its section very difficult. The narcosis was by chloroform until the larynx was opened, then cocain and adrenalin were applied to the interior of the larynx to abolish reflexes and to produce ischaemia. Some years ago while discussing the subject of removal of the larynx and expressing his dissatisfaction with the operation, Dr. Solis Cohen had suggested the dissecting up of the soft tissues until, as he expressed it, "they looked in the hand like a poached egg." Dr. Richardson had decided that at the next opportunity he would remove laryngeal growths by subperichondral dissection, and this he had done in the case presented, having already performed a similar operation on another patient about eighteen months ago, who is now quite well, only a slight hoarseness remaining ; and there is a fibrous cord extending antero-posteriorly across the larynx, replacing in a way the vocal cord removed. In the case now presented, by blunt dissection he had elevated the tissues, including perichondrium, going well wide of the growth ; the cartilage was not involved by the tumor. The dissection extended from the anterior commissure to the arytenoid on the left side, somewhat to the right side in front, and so low that a strip was taken off the cricoid. The wound was closed by stitching the muscles over the larynx, no stitches being put in the cartilages ; the wound was drained. The patient was out of bed on the fifth day, and recovery was excellent. The wound in the interior of the larynx is almost entirely granulated over ; there is a small denuded spot at the anterior commissure, but he anticipates no trouble from it.

Dr. McKimmie said that the case illustrates the advances being made in laryngological circles. Three operations had been done in Washington by the method described by Dr. Richardson ; two of Dr. Richardson's and one of his own. The point of great value in the technic of going under the perichondrium is that the lymph channels in the larynx are very few and on this account there is little chance of the cartilages being invaded by malignant growths, when the diagnosis is made early. Since the cartilages are satisfactorily covered over by granulations, the operation is to be elected also for the removal of sessile non-malignant growths. The safety to the patient and the post-operative comfort make the operation a very great advance in the surgery of the larynx.

In Memoriam.

DR. HENRY MARTEL NEWMAN.

Doctor Henry Martel Newman was born in this city, August 19, 1856. He was educated at the Rock Hill College, Maryland, and the Spencerian Business College, Washington, D. C. He was graduated from the Medical Department of the Georgetown University, in 1876. He was a successful physician, enjoyed a large practice and endeared himself to his patients by his kindly and sympathetic disposition. Being of a retiring and diffident nature he cared little for society and devoted his energies and time to the practice of his profession.

Your committee recommends the adoption of the following:

Resolved, That the members of the Medical Society of the District of Columbia have learned with deep regret of the death of our late brother, Doctor Henry Martel Newman.

Resolved, That the Corresponding Secretary is directed to forward to the relatives a copy of these resolutions.

(Signed) T. F. MALLAN,
E. L. MORGAN,
J. F. MORAN,
Committee.

Adopted by the Medical Society, December 7, 1910.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, November 9, 1910.—The President, Dr. Louis Mackall, presided; about 90 members present.

Dr. C. W. Richardson, Chairman of the Executive Committee, reported recommendations by the Committee as follows: (A) The continuation of the ANNALS, the cost not to exceed $50.00 per month; (B) The indorsement of the proposition offered by Dr. J. W. Chappell for the consolidation of the Medical Society and the Association of the District of Columbia and the adoption of the resolutions embraced therein; (C) That a proposed resolution in favor of Dr. Shands was not such as could properly come before the Society.

On motion of Dr. A. B. Hooe, the report and recommendations were adopted.

On motion, the Chair appointed the following committee to confer with a similar committee from the Medical Association of the

District of Columbia, to carry out recommendation B: Drs. G. Wythe Cook, J. W. Chappell, H. D. Fry, W. M. Sprigg, John Van Rensselaer, D. Olin Leech, J. B. Nichols.

The resignation of Dr. Henry M. Jewett from active membership was accepted.

On motion of Dr. C. W. Richardson it was ordered that the amended charter, as recommended by the Executive Committee, with the further amendments proposed by Dr. G. Wythe Cook, be approved, and that the Executive Committee be authorized and instructed to use all diligence to secure the enactment of the amended charter by Congress.

Dr. Jacob Breid, of the Indian Medical Service, Interior Department, was elected a member by invitation.

Dr. R. S. Lamb read a Review of Ophthalmology. Discussed by Drs. Dye, Shute, Griffith, S. B. Muncaster, Roy, Butler, Williams, Nichols, O. Wilkinson and R. S. Lamb. See page 423.

Wednesday, November 16.—The President, Dr. Mackall, presided; about 65 members present.

The death of Dr. H. M. Newman was announced and the Chair appointed Drs. Mallan, Moran and E. L. Morgan a committee to report resolutions of respect to his memory.

The Chair announced the following essayists and reviewers for the year 1911:

Essayists.	*Reviewers in.*	
R. B. Adams.	Ophthalmology.	W. K. Butler.
W. M. Barton.	Surgery.	W. P. Carr.
H. C. Macatee.	Gynecology.	A. L. Stavely.
J. S. Wall.	Internal Medicine.	P. S. Roy.
F. R. Hagner.	Neurology.	T. A. Williams.
D. K. Shute.	Otology.	Oscar Wilkinson.
S. S. Adams.	Pediatrics.	H. H. Donnally.
B. L. Hardin.		

Dr. Prentiss Willson read a paper entitled: "Kidney Displacements, Congenital and Acquired, as an Etiological Factor in Dystocia," and reported a case. Discussed by Drs. Moran, A. F. A. King, Fry, I. S. Stone and Willson. See page 436.

Dr. Henry D. Fry read a paper entitled: "Suppuration of Fibroid Tumors of the Uterus During Pregnancy and After Childbirth and Miscarriage." Discussed by Drs. G. Brown Miller, T. C. Smith, I. S. Stone, W. P. Carr and Fry.

Wednesday, November 23.—The President, Dr. Mackall, presided; about 100 members present.

Dr. McLaughlin said that in looking over the History of the Society he had been interested to observe in the biographical

sketch of Dr. A. F. A. King that the date of his birth was January 18, 1841, and that he obtained the degree of Doctor of Medicine in 1860. Since the 18th of January, 1911, will mark the completion of his seventieth year and the current year has witnessed the fiftieth anniversary of his graduation, it seemed fitting to move that a public testimonial of honor and esteem be tendered Dr. King by the profession, and that a committee of three be appointed to arrange for a complimentary smoker to be held January 18, 1911. The resolution was unanimously adopted.

Dr. Louise Tayler-Jones called attention to the fact that the Commissioners of this District propose to consider the question of the establishment of milk depots on Wednesday, November 30th, and offered the following resolution. In view of the high infant mortality which has heretofore prevailed in the District of Columbia, be it

Resolved, That the Medical Society of the District of Columbia recommends that the Commissioners seek an appropriation by Congress for the establishment of depots for the distribution to the indigent of pure milk suitable for infant feeding.

The resolution was adopted and the Corresponding Secretary instructed to forward a copy to the District Commissioners.

Dr. Max Einhorn, of New York City, addressed the Society upon "Spasm of the Pylorus." The address included a dissertation on the etiology, symptomatology and medical treatment of pylorospasm, including a description of the method of stretching the pylorus as devised by Dr. Einhorn. The Chair thanked the essayist on behalf of the Society.

Wednesday, November 30.—Vice-President Dr. P. S. Roy, presided; about 60 members present.

Dr. J. D. Morgan, for the Medical History Club, asked leave to place on record the following resolution adopted by that club November 26, 1910: "*Resolved*, That the Medical History Club, of Washington, D. C., makes application to be the first section in the new organization that is to come from the amalgamation of the Medical Society and the Medical Association of the District of Columbia."

The Corresponding Secretary was instructed to invite all members of the Medical Association of the District of Columbia who are not also members of the Medical Society to attend the meetings of the Society, present papers and participate in discussions, and to enjoy all the privileges of the Society except the right to vote, during such time as may be necessary to effect the proposed amalgamation.

Dr. Mackall, the President, took the chair, and announced the the death of Dr. Wm. L. Miller.

The resignation of Dr. George Barrie was accepted.

Dr. Williams presented specimens of writing before and after treatment of two cases of pen paralysis, and gave a résumé of the etiology and nature of the malady and of the methods employed in its treatment. Discussed by Drs. J. D. Morgan, S. S. Adams, T. C. Smith, Hickling, Roy, A. F. A. King and Williams. See page 440.

Dr. E. E. Morse read the essay for the evening. Title: Chloroform poisoning and the toxemia of pregnancy. Discussed by Drs. A. B. Hooe, E. L. Morgan, A. F. A. King, Randolph, Shute, Barton, Lemon, P. Willson, H. D. Fry, G. W. Cook, Allen and Morse.

Wednesday, December 7.—The President, Dr. Mackall, presided; about 65 members present.

The Treasurer presented his report for November, showing: Receipts, $222.50; disbursed, $78.25.

Resolutions of respect to the memory of Dr. Henry Martel Newman, prepared by a committee appointed for the purpose, were read and unanimously adopted by vote. See page 445.

The Chair appointed Drs. D. K. Shute, Wm. P. Carr and E. A. Balloch a committee to prepare resolutions of respect to the memory of Dr. Wm. L. Miller.

Dr. D. S. Lamb, for the Committee on Editing the Transactions, presented a bill for the publication and distribution of the November ANNALS, amounting to $60.00. He said that the journal had been condensed and abridged in every way possible without destroying its usefulness, and notwithstanding this effort the cost had exceeded the amount allowed by the Society. Dr. Isabel Haslup Lamb had paid for the publication of her article, and thus had reduced the bill by over $12.00. The Society ordered that the bill be paid.

Dr. W. Norwood Souter's resignation from active membership was accepted.

The following communication was ordered to be recorded: "At the meeting of the Therapeutic Society of the District of Columbia, December 3, 1910, the following resolution was adopted: '*Resolved*, That the Therapeutic Society of the District of Columbia signifies its desire to become an affiliated body with the General Medical Society, formed by the amalgamation of the Medical Society of the District of Columbia and the Medical Association of the District of Columbia: *Provided*, the Therapeutic Society be permitted to elect its own officers and conduct its own special affairs.'"

A communication from the Medical Association of the District of Columbia announced the appointment of the following Committee, as requested by resolution of the Medical Society adopted November 9th: Dr. H. L. E. Johnson, Chairman; Drs. W. M.

Barton, L. J. Battle, H. P. Parker, E. H. Egbert, W. O. Owen and L. H. Reichelderfer.

Vice-President D. Olin Leech took the chair, and the President delivered the annual address.

The Society extended a rising vote of thanks to Dr. Mackall for his address and for the faithful and admirable manner in which he had conducted the duties of his office during the year.

The Society adjourned until the first Monday in January, 1911.

WASHINGTON MEDICAL ANNALS.

Journal of the Medical Society of the District of Columbia.

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EDITORIAL COMMITTEE.

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Benj. G. Pool, M. D., . . . 945 Rhode Island Avenue, N. W.
Prentiss Willson, M. D., ... The Toronto.

Editorial.

We regret to have to announce the death of another member of the Society. Dr. Presley C. Hunt died December 15th at Johns Hopkins Hospital, Baltimore.

Attention is invited to the advertisement of Parke, Davis & Co. in regard to surgical dressings, especially gauze and tapes.

Prize Essay.—The American Proctologic Society announces that a cash prize of $100.00 will be awarded as soon as possible in 1911 to the author of the best original essay on any disease of the colon. Essays must be submitted on or before May 10, 1911, to the Secretary, Dr. L. H. Adler, 1610 Arch Street, Philadelphia, Pa. Those interested should write to him for further information.

We are requested to announce that the next meeting of the National Confederation of State Medical Examining and Licensing Boards will be held in Chicago, Tuesday, February 28, 1911, at the Congress Hotel. An invitation to this meeting is extended to all members of State Medical Examining and Licensing Boards, teachers in medical schools, colleges and universities,

delegates to the Association of American Medical Colleges, to the Council on Medical Education of the A. M. A., and to all others interested in securing the best results in medical education.

WE ARE ASKED TO STATE THAT *The American Journal of Surgery* of January, 1911, will contain a series of contributions from well-known Southern surgeons: Howard Kelly, J. Shelton Horsley, W. F. Westmoreland, Stuart McGuire, V. and V. W. Pleth, Southgate Leigh, George R. White, C. S. Venable, Louis Frank and others, on a variety of subjects.

ON THE EVENING OF NOVEMBER 23D, when Dr. Max Einhorn of New York City read his paper on "Pylorospasm" before the Medical Society, Dr. Gerry Morgan gave the doctor a reception, which was attended by many members of the Society.

A LETTER FROM THE EDITOR OF THE *Utah Medical Journal*, Dr. Frederic Clift, December 2, 1910, concludes with these words: "I may add that I have greatly appreciated your journal in the past; it contains more matter of real service to the profession than the majority of the $5.00 publications."

THE EDITORS OF THE *American Journal of Dermatology* send to us a display advertisement of their journal with request to print it. As we are unable to do so we ask attention to the fact that the journal is an excellent one and valuable to those interested in dermatology and venereal diseases. Address the Journal, at Fidelity Building, St. Louis, Mo. Subscription price per year, $2.00.

THE DELAWARE STATE MEDICAL SOCIETY.—Dr. Busey, at the 75th Anniversary of the Medical Society of the District of Columbia, February, 1894, stated that this Society was the twelfth in the list of the medical societies of the United States that at that time had reached the age of 75 years. From the list of the twelve it appears that he omitted the Delaware State Medical Society, which was founded in 1789, and therefore should have been fourth in the list, making the Medical Society of the District of Columbia the thirteenth instead of the twelfth.

A COPY OF THE HISTORY OF THE MEDICAL SOCIETY may be obtained at a cost of $3.00, which includes the charge for delivery, by sending a check for that amount to Dr. Franzoni, 605 I Street, N. W. It is hoped that members who have recently

joined will take notice of this announcement. The *Journal of the American Medical Association*, December 24, 1910, page 2265, reviews the History and concludes with these words: "The book is of value not only to members of the Medical Society of the District of Columbia, but also to all who are interested in medical history. The Society is to be congratulated on the volume which the committee has produced."

The same issue, page 2268, contains an abstract of Dr. I. S. Stone's case of "Wandering Tumor of Uterus," published in the November ANNALS.

MEDICAL HISTORY CLUB OF WASHINGTON, D. C.—Program for 1910–1911.—*Officers:* President, Dr. James Dudley Morgan; Vice President, Dr. G. Wythe Cook; Secretary and Treasurer, Dr. Truman Abbe; Corresponding Secretary, Dr. Huron V. Lawson; Executive Committee, Drs. D. K. Shute, P. S. Roy, I. S. Stone and the Officers.

Members:—Drs. Truman Abbe, Frank Baker, W. C. Borden, G. Wythe Cook, H. H. Donnally, Howard Hume, H. V. Lawson, T. S. Lee, G. Brown Miller, J. D. Morgan, J. B. Nichols, H. P. Parker, B. M. Randolph, C. W. Richardson, P. S. Roy, Sterling Ruffin, D. K. Shute, I. S. Stone, Joseph Wall, W. W. Wilkinson.

Meetings:—

Date.	*Essay.*	*Host.*
Jan. 28.	Auenbrugger and the Vienna School, By Dr. Lawson.	Dr. Baker, 1788 Columbia Rd.
Feb. 25.	Bichât and the French School, By Dr. Donnally.	Dr. Lawson. 1117 Vermont Ave.
Mar. 25.	Pasteur and the Bacterial Origin of Disease, By Dr. Hume.	Dr. Wall, 1730 M St.
Apr. 26.	Casserius and Anatomical Illustration, By Dr. Baker.	District Medical Society.

THE HIPPOCRATES SOCIETY, the object of which is "the cultivation and promotion of knowledge in whatever relates to the science of medicine and surgery," holds meetings on the second and fourth Thursdays of each month from October to May. The membership in this Society is limited to 25. The officers for the present season are: President, Dr. Charles S. White; Vice President, Dr. Thomas S. D. Grasty; Secretary-Treasurer, Dr. Laurence M. Hynson.

Schedule of Meetings for Session of 1911.

Date.	*Place.*	*Essayist.*
Jan. 26.	Smoker.	Invited speaker.
Feb. 9.	Dr. J. Russell Verbrycke, Jr., The Rochambeau.	Dr. Edgar P. Copeland.
Feb. 23.	Dr. Edgar P. Copeland, The Rockingham.	Dr. W. W. Wilkinson.
Mar. 9.	Dr. J. Lewis Riggles, The Champlain.	Dr. W. H. Syme.
Mar. 23.	Dr. W. H. Merrill, 1913 14th St.	Dr. G. S. Saffold.
Apr. 13.	Dr. J. D. Rogers, 1752 S St.	Dr. S. H. Greene, Jr.
Apr. 27.	Dr. W. H. R. Brandenburg, 1101 14th St.	Dr. W. G. Young.
May 11.	Dr. Chas. M. Beall, The Huntington.	Dr. J. R. Verbrycke, Jr.
May 25.	Smoker.	President's Address.

Pamphlets Received.

Public Health Bulletin, No. 40. "Transactions Eighth Annual Conference of State and Territorial Health Officers, with U. S. P. H. and M. H. S., April, 1910."

W. H. Frost, "The Field Investigation of Epidemic Poliomyelitis;" reprint from Public Health Reports, No. 55, 1910.

Elmer Sothoron, "Three cases of Cardiac Lesions Complicating Pregnancy and Labor;" reprint.

W. A. Wells, "Suppuration of the Antrum of Highmore;" reprint.

Tom A. Williams, "Modern Neurology on Spiritualism and Possession;" also a case of "Psychasthenia" in a child age two years, due to coffee drinking; also "Poliomyelitis; New Facts Concerning Its Etiology, Early Diagnosis and Treatment;" reprints.

J. F. Anderson, A. M. Stimson, "Bacteriological Procedure in Suspected Cholera, with Report of a Positive Case;" reprint from Public Health Reports, No. 52, 1910.

F. C. Smith, "Pulmonary Hemorrhage in the Tuberculous at High Altitude (6,200 feet); Report of 56 Deaths; Frequency of Associated Heart Disease;" reprint from Public Health Reports, No. 51, 1910.

Leartus Conner, "The Economic Value of Family Physician Refracting;" also, "Family Physician Refracting as a Factor in Medical Practice, and Its Promotion During 1910;" also, "A Conference of Ophthalmologists with Organization Officials on Family Physician Refracting;" reprints.

Leartus Conner, A. R. Baker and J. Thorington, "Report of Committee on Promotion of Family Physician Refracting;" reprint.

W. A. White, "The Theory, Methods and Psychotherapeutic Value of Psychoanalysis;" reprint.

B. DeF. Sheedy, "The Saw and Crushing Instruments in Surgery of the Nasal Septum;" reprint.

Frederick Clift, "Therapeutic Fads and Fancies;" also, "State Board of Medical Examiners and Medical Fakers;" reprints.

Abstract of Proceedings U. S. Pharmacopoeial Convention, 1910.

A. J. McLaughlin, "Cholera, Its Nature, Detection and Prevention;" reprint from Public Health Reports, No. 53.

Parker Syms, "Some Surgical Aspects of Gastric Ulcer;" reprint.

G. A. Menge, "A Study of Melting-Point Determinations;" Hygienic Laboratory, No. 70, October, 1910.

L. L. Lumsden, "Report of an Outbreak of Typhoid Fever at Omaha, Neb., 1909–10;" also, W. H. Frost, "The Water Supply of Williamson, W. Va., and Its Relation to an Epidemic of Typhoid Fever;" Hygienic Laboratory, Bulletin No. 72, November, 1910.

REVIEWS.

Diagnosis and Treatment of Diseases of Women.—Henry Sturgeon Crossen, M. D., Second Edition; 744 engravings. St. Louis. C. V. Mosby Company, 1910.

The volume is a complete and up-to-date résumé of the best gynecological teaching. The numerous illustrations leave nothing to be desired, and include many from other standard books which have preceded this excellent treatise. The subject-matter is brought before the reader in excellent form, and the meaning of "masses" in different locations made plain to the student. The use and application of laboratory methods of research is timely, and the general arrangement of subjects is original and generally satisfactory. The writer's views on pathologic matters are not always in accord with our own or what we think is the accepted teaching. There is still some hesitation about laying aside the term "chronic endometritis" and other conditions which are not merely "chronic," but permanent changes, a result of a former infection. We also take exception to certain modern authors having credit for what appears as their work, but which belongs to another. For instance, Baldy, on page 294, and Hirst, page 553, are quoted, when the method, as every gynecologist well knows, belongs to Emmet. Again, we fail to agree that Hegar's cystocele operation is either the best or that it in-

volves the modern ideas which have done so much to make this operation successful. We would like the author to try F. H. Martin's modification of the Alexander operation, or that of Mayo, before he concludes that all has been found in the "Gilliam-Crossen" method. Lack of space prevents a further review of this interesting and valuable work, and we must be content with a complimentary allusion to the careful proofreading and general excellence of the entire book. I. S. STONE.

HOOKWORM DISEASE BY DOCK AND BASS.—The appearance of this volume of about 250 pages is most opportune in view of the importance which hookworm disease has of late so justly assumed in our southern States and in Porto Rico. The subject is thoroughly and clearly dealt with in a careful and methodical way, embracing all points of interest from the definition to the treatment of the disease. The illustrations are excellent and add greatly to the value of the work. With this book as a guide there should be little difficulty for the physician to recognize and treat successfully cases of uncinariasis. The authors have had an excellent opportunity to study the disease in all its phases, and are therefore competent to speak authoritatively.

T. A. CLAYTOR.

NEPHROCOLOPTOSIS.—A DESCRIPTION OF THE NEPHROCOLIC LIGAMENT AND ITS ACTION IN THE CAUSATION OF NEPHROPTOSIS, WITH THE TECHNIC OF THE OPERATION OF NEPHROCOLOPEXY, IN WHICH THE NEPHROCOLIC LIGAMENT IS UTILIZED TO IMMOBILIZE BOTH KIDNEY AND BOWEL. By H. W. LONGYEAR, M. D. With 88 Special Illustrations and a Colored Frontispiece. St. Louis, C. V. MOSBY COMPANY, 1910.

The operative treatment of nephroptosis has not been satisfactory. The results obtained by the various methods employed have been often disappointing and frequently there has been complete failure. Various theories have been proposed to explain the etiology and pathology of this condition and to furnish a rational and satisfactory method of dealing with it. These have tended to confuse rather than simplify the problem. The result is, there is no generally accepted operative technic which can be depended upon to give uniformly good results. Even when the kidney has been replaced and securely anchored in its proper place, the accompanying gastro-intestinal and nervous symptoms very frequently remain uninfluenced and continue unrelieved by the operation. Under these circumstances, therefore, any contribution to the subject which leads to a better understanding of the underlying causes of this puzzling condition, and suggests a substantial improvement in the methods of dealing with it, deserves attention.

In this monograph of 250 pages Longyear has given us a very clear exposition of his views in regard to the etiology, pathology and treatment of nephroptosis. The selection of the title, nephrocoloptosis, is explained in the foreword as follows: "I believe that in the nephrocolic ligament I have discovered the principal positive etiologic factor in nephroptosis. The belief that a nephroptosis, because of the action of this ligament, must always be secondary to and the result of a coloptosis (except when due to trauma), and consequently should not be considered separately from, but of necessity with, the prolapsed colon, explains my reason for both the form of the title of the book and the etiologic basis on which the subject is treated." The scope of the monograph is clearly indicated by the sub-title. The subject matter is divided into six chapters as follows: Anatomy and Pathology, Etiology, Symptomatology, Diagnosis, Treatment, Reports of Cases.

The author's views as to the etiology of nephroptosis may be briefly summarized as follows: The kidneys are firmly attached to the colon by strong connective tissue bands, the nephrocolic ligament. The laxity of peritoneal attachment of the colon a. the hepatic flexure is the key to the whole line of descensus. The cecum, consisting of a sac with its outlet upward, necessitates the contents of this viscus to be always forced in that direction, which requires the application of tractile force in the opposite direction. To this natural downward traction of the bowel is added the weight of a full torpid cecum, distended more or less with fecal matter. With the descent of the cecum, traction is made on the kidney through the nephrocolic ligament with the resulting downward displacement of that organ. Hence, "the kidney is influenced by the bowel and not the bowel by the kidney." In those cases where the nephrocolic ligament is long and loose, coloptosis may occur without nephroptosis. This view supports the observation of Glenard, viz: "Enteroptosis without nephroptosis, but never nephroptosis without enteroptosis."

"The action of the colon on the left side is in the opposite direction, and its contents are thus forced downward, making no countertraction on the kidney of this side through the nephrocolic ligament. The phrenocolic ligament, which supports the bowel at the splenic flexure, is also an important factor in preventing the displacement of the gut at this point, as—unlike the hepatocolic ligament—it is always present and uniformly strong and dependable. In consequence of these favorable mechanical conditions, the left kidney is rarely displaced."

In the treatment of this condition, therefore, it is of the greatest importance, according to the author, not only to replace the kidney and anchor it securely in place, but also at the same time to relieve the associated and causative displacement of the bowel. The technic of the operation employed for this purpose is fully

described and clearly illustrated by good drawings and diagrams. Emphasis is given to the importance of after treatment. The details of 56 cases operated upon by this method are given. The results have been uniformly good. There has been no mortality.

Monographs of this kind are deservedly popular, as they present the work of the author in a form easily accessible. This volume should appeal to those interested in this particular field of surgery.

H. A. Fowler.

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